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FRIDAY, OCTOBER 24, 1958

[No. 17

## CONTENTS

|  | PAGE |
|--|------|
| Editorial Notes .. .. .  | 497  |
| The Freight Traffic Crisis .. .. .                             | 499  |
| Temple Mills Marshalling Yard .. .. .                          | 500  |
| Serving the Public Interest .. .. .                            | 500  |
| The American Railway Passenger Problem .. .. .                 | 501  |
| British Transport Commission Traffic Receipts .. .. .          | 502  |
| Letters to the Editor .. .. .                                  | 502  |
| The Scrap Heap .. .. .   | 503  |
| Overseas Railway Affairs .. .. .                               | 504  |
| Automatic Train Control .. .. .                                | 506  |
| New Station at Rotterdam .. .. .                               | 508  |
| Increasing Capacity of Johannesburg-Durban Main Line .. .. .   | 509  |
| Buffet Cars for Southern Region Diesel-Electric Trains .. .. . | 511  |
| Electric Traction Section .. .. .                              | 513  |
| Personal .. .. .   | 517  |
| New Equipment and Processes .. .. .                            | 520  |
| News Articles .. .. .  | 522  |
| Contracts and Tenders .. .. .                                  | 525  |
| Notes and News .. .. .   | 525  |
| Railway Stock Market and Official Notices .. .. .              | 528  |

### Railway Pay Review

**A**GREEMENT has now been reached between the British Transport Commission and the three railway trade unions as to the terms of reference to the independent body which is to be appointed to inquire into the wages and salaries structure on the railways and its relation to those in various other undertakings. The independent inquiry is to be by a body of three, consisting of a chairman and two members appointed by agreement between the Commission and the trade unions, but none of them is to be a member or officer of the Commission or officials or members of the unions. An endeavour is to be made to compare jobs on the railways with similar work in other nationalised industries, public services, and appropriate private undertakings, making due allowance for rates of pay and any other emoluments as may be properly taken into account. A report setting out objectively the facts, together with any general observations or conclusions as

the inquiring body consider appropriate, is to be presented. The independent body, in conducting its examination, is also to pay due regard to the existing railway wages and salaries structure and it will be empowered to draw attention to any feature which it considers should be brought to the notice of the parties. The Commission and the unions are now considering the names of the three persons who are to be invited to serve on the inquiring body. Meantime, the N.U.R. has reserved the right to lodge a wages claim through the normal negotiating machinery, based on the cost of living, during the course of the inquiry. The task to be undertaken is complex as well as inevitably controversial, but there is little doubt that over the years the wages structure in industry has undergone change and it is possible that some adjustment is necessary on the railways. Although the inquiry now to be undertaken cannot result in a wage award, the unions, presumably, have accepted the fact that any adjustments which are indicated as necessary in all probability will be accepted and implemented by the Commission. In the circumstances, it would have been better if the N.U.R. had not exercised its right to reserve freedom of action in the lodging of a pay claim during the course of the inquiry, but that no doubt is a matter of political expedience so far as the N.U.R. leaders are concerned.

### Rhodesia Railways Take Over Southern Section

**S**OUTH African Railways and Rhodesia Railways have now agreed on transfer to the latter of responsibility for operating the 580 miles of lines between Bulawayo, in Southern Rhodesia, and Vryburg, in the Cape Province of the Union; most of the route is in the territory of the Bechuanaland Protectorate, of which the Government was consulted. The line and its 14 stations and many sidings have always been owned by Rhodesia Railways and its predecessor, the Bechuanaland Railway Company, and have been worked with Rhodesia Railways locomotives. The S.A.R. have supplied all staff, including engine crews and guards. As a first phase Rhodesia Railways will assume full responsibility for operation to Mahalapye, roughly half-way. This will involve employment of some 100 Europeans along the line and 140 in train crews who will live in Southern Rhodesia. A team of Rhodesia Railways officers, aided by a representative of the S.A.R., is to study arrangements for the transfer. From its report, details will be planned and a decision taken on the effective date for the change. Items considered will include the need for housing, alterations to track layout, and other factors involved in basing operation on Bulawayo. Rhodesia Railways announced last month that under-employment among train crews north of Wankie was a cause for concern. The co-operation of the South African Railways in facilitating the change is particularly welcome.

### New Railways in Guinea

**T**HE independence of Guinea, which earlier this month proclaimed itself an independent republic, coincides with the building of two lines to exploit bauxite deposits. The country, 97,000 square miles in area, with a population of 2,400,000, is at present served by the one 410-mile metre-gauge railway built under French auspices from Conakry, the capital and principal seaport to Kankan, in the north-east, whence there are connections by river steamers on the Niger, with various territories of the French Union. Of the two lines now under construction, one will convey bauxite 75 miles from the deposits near Boké to the coast near the mouth of the river Nufiez, in the north-west of Guinea; from there it will be shipped to Canada for processing into aluminium. The second railway, 93 miles long, is being built between Fria and Conakry in connection with open-cast mining and the opening of an aluminium works near Fria. The output from Fria is planned to be 480,000 tonnes a year, which is a fair load for a metre-gauge railway. Tracklaying is reported to be in progress, and the line should be in good working order by the time production starts at Fria in 1960. Meanwhile, the capacity of the port of Conakry is being doubled, to deal with the additional railway traffic.

### Western Region Reorganisation

ELSEWHERE in this issue we record a number of re-designations and appointments in the traffic department of the Western Region of British Railways. The reorganisation was forecast by the appointment, in January this year, of Mr. A. C. B. Pickford, then Chief Commercial Manager, as Assistant General Manager (Traffic). In our January 10 issue, we commented editorially on the development, which is aimed at decentralisation of management and responsibility. During the intervening period much care has been given to the formulation of details of the plan, which is in line with the general traffic policy of the British Transport Commission, of diverse and quite distinct traffic flows in districts such as London, Bristol, Birmingham, and South Wales. The selection of officers to fill the new appointments has now been made. The scheme follows the natural divisions of traffic on the Western Region, and takes in a number as London, Bristol, Birmingham, and South Wales. The newly-appointed officers will be responsible to the general direction of Mr. Pickford.

### Overseas Railway Traffic

CANADIAN Pacific Railway revenues for August, 1958, were \$39,573,789 (against \$43,510,924 for August, 1957) and railway expenses \$36,532,617 (\$40,138,697), so that net earnings were \$3,041,172 (\$3,372,227). Aggregate net earnings from January 1 were \$21,942,693 (\$21,564,520). Operating revenues of the Canadian National Railways for the same month amounted to \$59,239,000. Expenses, taxes, and rents totalled \$58,648,000, making the net operating income for the month \$591,000. In August, 1957, operating revenues were \$64,964,000; expenses, taxes, and rents were \$65,050,000, and the net operating income deficiency was \$86,000. East African Railways & Harbours approximate railway revenue for August, 1958, was £1,635,000, compared with £1,513,000 in August, 1957; an increase of £122,000. The railway revenue for the first eight months of the year was £12,514,000, compared with £11,470,000 during the same period of 1957; an increase of £1,044,000. Except for other coaching traffic, which declined by 6 per cent, there were increases in receipts from all services. Figures received from the Midland Railway Company of Western Australia Limited show that estimated road and railway receipts for July were £A60,635 (against £A68,062 for July, 1957).

### Pullman Credit Facilities

FEW better ways exist of promoting goodwill and good fellowship with business friends and acquaintances when travelling than hospitality in a Pullman car on British Railways; this is true of both pre-arranged entertainment and an impromptu invitation at a chance meeting. The comfort of Pullman travel is widely recognised as contributing to the efficiency of those who must be spared fatigue on their journeys. To avoid the necessity for directors and executives of firms to carry cash for expenses in Pullman cars, or to disburse it when entertaining en route, the Pullman Car Co. Ltd. now offers credit facilities. In so doing it has been enterprising in adapting a growing practice. The basis of the system is a permit bearing the name of a representative of the company concerned. The permit is signed by the holder and produced when a bill for refreshments or the Pullman supplement ticket is presented by the Pullman car conductor. The permit holder signs the bill, which is sent with an invoice to his firm. The bill is evidence of payment of expenses for income tax purposes and affords easy accounting of the sums disbursed; and the system is extremely simple.

### Improvement in Freight Traffic in U.S.A. ?

THE increase in freight traffic expected by the Illinois Central Railroad, one of the most efficient in the U.S.A., and in a relatively good geographical situation, should not be assumed to indicate improvement throughout the country. On the other hand, the President of the

I.C.R.R., Mr. Wayne A. Johnston, has stated that his company looks for a gradual recovery over the next few months as a result of improvement in business conditions generally. He explains, moreover, that it is hard at this time to foretell the effect on the railways of the recent passage by Congress of the Transportation Act, which *inter alia* abolished the tax on freight receipts. The Illinois Central is expanding its wagon building and repair programme and recalling to its three major shops staff dismissed for economy reasons. Work planned for the remainder of the year provides for special traffics; it includes adaptation of covered wagons for "piggy back" service and of hopper wagons for carrying wood chips. The efficiency of the undertaking is shown in the ratio of wagons awaiting repairs to total ownership. On August 1 it was 3.6 per cent for the Illinois Central, against 8 per cent for all U.S.A. Class I railways. The new programme is aimed at improving the ratio. Since 1945 the company has built or acquired 25,000 wagons, renewing about one-half of its total fleet.

### Rate-Subsidised Public Transport

THE scheme for "total municipalisation" of public transport in Hull, proposed recently by Alderman W. E. Body, Chairman of the Hull Town Planning Committee, provides for completely free municipal bus transport in the city to the exclusion of private motorcars, so as to ease traffic congestion. The cost would be borne by a rate levy. No such arrangement, we believe, has ever been put into practice. Alderman Body has suggested that something of the sort has been originated in the U.S.A. What he seems to have had in mind is an arrangement in San Antonio, Texas, whereby some 47 shops arranged with the San Antonio Transit Company for free travel for shoppers using the ordinary buses on their ways both to and, after making purchases, from the shops. Free transport provided from the rates is quite another matter. All transport subsidies engender inefficiency, because of the lack of a financial spur. Free transport must have this disadvantage in full measure.

### Subsidised Local Services on U.S.A. Railways

WHAT is termed "an experiment in integrated transportation" is being considered by the Pennsylvania Railroad and the Reading Company in conjunction with the City Council of Philadelphia. The railways, it is reported, would provide extra services at special low fares, and the city would pay compensation for the additional operating expenses entailed, estimated at \$160,000 for a six-month trial period. There would be a basic 30-cent fare "from any suburban station to downtown"; a further 10 cents would buy a transfer ticket for use on the buses in the city. The compensation paid by the city, however, would not cover the existing losses on the railway suburban services. Rate subsidies are understood to be paid in respect of local railway services of the New Haven Railroad in the Boston and of the Long Island Railroad in the New York areas, largely as a means of reducing road congestion.

### Apprentice Training in the Southern Region

THE importance of a well-organised apprentice training scheme to ensure a supply of technically trained recruits to British Railways was emphasised by Sir Philip Warter, Chairman of the Southern Area Board, at the opening of the Southern Region apprentice training school at Eastleigh on October 15. The school has the equipment and instructors to give school leavers aged 15 a year's preliminary training for several skilled trades which are carried on at the Eastleigh locomotive, and carriage and wagon works. Previously railway apprentices were launched on their careers in the traditional way. They were started on work in the shops, and reliance was placed on formal training in part-time classes elsewhere. The opportunity given to each apprentice to attempt various operations should reveal his aptitude and help in placing him in the job for which he is best suited. At the same time, the



instruction in industrial history, science, and English, and discussions on general subjects included in the curriculum, will help to broaden his field of knowledge and give him a general background.

### Electric Stock for Kent Coast Line

AT the opening ceremony of the apprentice training school, Sir Philip Warter referred to the new construction in hand at the Eastleigh Works. This includes some of the rolling stock now being built for the Kent Coast electrification. The whole scheme is estimated to require 112 four-car express and 108 two-car intermediate electric multiple-unit sets. They will have identical electrical equipment of a new type using cam-operated notching contactors instead of the standard unit switches. The traction motors will be electrically identical with the standard used since 1951, but will have roller suspension bearings so that plain oil lubricator bearings may be eliminated entirely from this stock, mainly in the interests of maintenance. The coach construction generally will be of British Railways standard main-line design, but thermal and sound insulation will be installed. The express units will have double-glazed windows and corridors throughout. Some will also include buffet cars with all-electric cooking facilities. Apart from the accelerated services possible with electrification, the stock should set a new standard of comfort on the Kent Coast services.

### Hungarian Diesel Development

THE acceleration of the diesel manufacturing programme in Hungary, assisted by a 450 million forint (£13 million) investment over the next three years is an indication of the potential export market for Hungarian-built stock. At the Wilhelm Pieck Carriage Works at Győr 75 130-h.p. diesel shunting locomotives are to be built and it is also intended to build diesel multiple-unit trains and engines. It is also planned to complete 60 diesel trains and 120 trailer coaches there each year. In the main the equipment for this stock is being made in Hungary, but the determination to put quality first was evident in the placing of a £1,000,000 contract earlier this year with J. Stone & Co. (Deptford) Ltd. for supply of air-conditioning equipment for main-line coaches and railcars built at Győr. Further requirements will be by joint manufacture under licence. At the Ganz and Mavag locomotive works 180 D.H.M. 400-h.p. engines are to be constructed during the next three years, and production of high-speed multiple-unit trains, powered by 450-h.p. five-gear Ganz-Jendrassik engines, is also to be increased. At present rolling stock is being exported to the Argentine, the United Arab Republic, Burma, Yugoslavia, Poland, China, and Russia.

### The Westminster Bank Railway Society

WHAT is believed to be the only bank railway society in this country has grown up in five years from the lunch-time discussions of several members of the Westminster Bank staff. The object of the society is the study of railway and allied forms of transport. The first meeting was addressed by Mr. D. S. M. Barrie, now Assistant Secretary General to the British Transport Commission. The Society's activities have been enhanced by the opening of their new club room, an occasion described elsewhere in this issue. In performing the opening ceremony, Sir Reginald Wilson, Member of the B.T.C. and Chairman of the Eastern Area Board, spoke of the value that can arise from meetings of amateur enthusiasts. This is particularly true when such enthusiasts are from the banking profession. They are able to bring a trained mind to bear on railway problems and public policy and discuss these affairs rationally and intelligently. Their interest in the modernisation of British Railways and the public factors involved no doubt will provoke lively discussion from which could arise suggestions which may prove valuable to the railway authorities.

### The Freight Traffic Crisis

IT is vitally important that the modernisation of British Railways be pressed forward as fast as is physically possible to enable them to deal with their traffic, and especially goods traffic, at a standard of efficiency which ensures that consignments for which the railways are the most suitable means of transport, are sent by rail, and to reduce working costs. Unless higher standards are attained quickly, more traffic will be diverted to the roads, and to "C"-licence transport in particular. The cost of providing new motive power, rolling stock and signalling and other equipment already in use, or being supplied must be justified by improved freight and other receipts, to merit further investment of money advanced by the Treasury. A great deal depends on efficiency in management and on the efforts of the rank-and-file of railwaymen in making the best use of what already exists to work with; and much can be achieved by skilful salesmanship of railway transport.

We believe that much effort is being made by all grades of railwaymen. But they cannot achieve the impossible. Freight traffic figures are bad, as is shown by the figures for the four-week periods for a good many weeks past; they were by no means satisfactory a year ago, and they have dropped since then. The chief reason is not that the railways have lost traffic to the roads, but that because of the present recession the traffic does not exist to be moved.

The situation was described plainly by Sir Brian Robertson, Chairman of the British Transport Commission, at the dinner given last week by the Commission to the European Ministers of Transport who attended the recent conference in London. His statement was so blunt as to impress itself, we hope, on the minds of many of the public. Large sums, he pointed out, were spent on modernisation, but they had scarcely begun as yet to pay dividends. There was little profit to be had from an electrification scheme when only a small part of it was complete; only when the whole section was turned-over to electric traction did it produce "the large reward." Similarly, to place a score of diesel locomotives in service on a section which required 200 for economic working, achieved little as regards the reduction of operating costs. Only when all steam had been eliminated from that section did really appreciable results appear. That is why it is essential that modernisation, once started, should be pressed forward steadily and quickly.

Two basic railway traffics, he explained, were badly affected by the recession. Instead of selling and moving freely, coal was being put into stock in large quantities. The steel industry also was producing very considerably below capacity and below the level of the 1957 figure; he might have added that there had been a slight improvement recently in steel production in Britain. The problem of surplus coal stocks is not peculiar to Britain and has been the subject of special meetings of the European Coal & Steel Authority. In the U.S.A. the fall in the level of steel production has been causing anxiety for some time. Everywhere traffic from these two industries is, in his words, "the very breath of life to railways." At the recent International Railway Congress in Madrid the situation was shown to be causing grave concern to senior railway officers on the Continent. It is particularly acute in Britain, where many miles of railway were built for coal transport. Recently British Railways have taken many steps to improve the handling of coal and mineral traffic, including building of new wagons and new coal railheads. The re-orientation of coal despatches since the war has resulted in some expensive alterations in operating arrangements. The railway officers concerned, however, are aware of the trends, including increasing despatches of coal from pits by road. It is only too obvious that merchandise traffic is in no better condition. Because of its variety, it is less susceptible than coal class traffic to changes of a permanent nature, though it is more sensitive to the vagaries of industrial and trading activity. To deal with all these traffics, British Railways have been active in improving their methods and equipment. They were already doing so before an immense

and welcome increase in the scope of improvements was made possible when the modernisation plan was launched in 1955. The measures affecting goods traffic are many, and include motive power, wagons, continuous braking, automatic couplers, new marshalling yards and terminals, and signalling and other aids to improved operation, besides expensive but essential office equipment, such as that beginning to be used in mechanisation of traders' accounts. It would be very short-sighted not to prosecute modernisation plans with vigour, more particularly the implementation of measures which can give quick results.

The situation is believed by many people to be temporary. Sir Brian Robertson pointed out to the European Ministers of Transport that British Railways "have no resources to cushion them against such a sudden blow, and it is hurting a lot." It is hard to see what more can be done to increase goods traffic receipts and lower operating costs, apart from pressing on with modernisation. How far the many parts of the plan could be accelerated by increased investment when there is no physical difficulty, such as shortage of material or manpower, in increasing the speed of implementation must differ according to widely differing circumstances. It is essential that the railways be enabled, by increasing investment where necessary, or by re-accelerating those parts of the plan which have been slowed down for financial reasons, to weather the economic storm by improving their equipment, which will also increase their ability to deal with future problems. The Chancellor of the Exchequer, Mr. Heathcoat Amory, stated last week that the Government had been able to permit a resumption of the increase in the total of public investment. Therefore, he continued, "the total in 1959-60 is likely to be quite appreciably higher than this year or last." No details are yet available of what is planned, but it is to be hoped that the urgent needs of the railway, as a service of vital importance to the community, will be met.

### Temple Mills Marshalling Yard

**A**LTHOUGH Thornton marshalling yard, in the Scottish Region of British Railways, was the first to come into use in Europe with two stages of wagon retardation, Temple Mills, near Stratford, in the Eastern Region, was the first yard to be designed to incorporate primary and secondary retarders. Because of the easier conditions on the site, the Thornton yard took the shorter time to build. These facts were explained by Mr. E. R. Newens, Assistant District Engineer (Modernisation), Stratford, Eastern Region, British Railways, in a paper on reconstruction of Temple Mills marshalling yard read to the London section of the Permanent Way Institution last Monday.

In the old layout the main lines ran through the middle of the existing yards and to make room for the new yard one of the first requisites was to divert the main lines on to a new alignment on the south side of the site. Alterations to the running lines were carried out between Lea Bridge Station and Coppermill Junction, which is  $\frac{1}{2}$  mile further west, to enable both up and down goods lines to be provided through this section. Previously the down goods line terminated at Lea Bridge.

In the new layout there are 12 reception sidings on a straight alignment at the Lea Bridge, or western, end of the site, with wagon capacities varying between 42 and 75 wagons, giving a total standage capacity of 680 wagons. The sidings are laid at 12 ft. 2 in. centres to give intervals of 7 ft. 5 $\frac{1}{2}$  in. between running edges, with a wide space of 14 ft. 5 $\frac{1}{2}$  in. between the upper and lower groups for the installation of lighting masts.

The gradients of the sidings are rising at 1 in 1,615 for the first third of the length, at 1 in 460 rising for the middle third, and at 1 in 40 for the last third up to the summit of the hump. Seven of the southernmost sidings can be entered from either direction. Alongside and to the south of the reception sidings are eight sidings forming a motive power servicing depot, and to the north of the hump area and the sorting sidings, a new yard known as the West Yard has been laid.

The sorting sidings are arranged in eight fans, each of

six sidings, with a brake siding on the two outermost fans and a transfer road on the northernmost fan. The total standage capacity of the 47 sidings is 3,044 wagons.

The hump cabin and its associated relay room are situated at the summit of the hump on the right-hand side and the control tower is on the centre line of the yard between the primary and secondary retarders.

Mr. Newens states that when the decision was taken in 1954 to reconstruct the yard, there were 10 small yards on the site, and six others not more than five miles away dependent upon Temple Mills and largely doing work to relieve it. Of these outlying yards all with the exception of the down yard at Goodmayes were closed for marshalling purposes. At the time of authorisation, the scheme was estimated to cost some £2,500,000.

### Serving the Public Interest

**T**HE variety of the needs and desires of a great community served by a public transport undertaking such as London Transport is so great that it is hard for anybody to see what the real needs are, and how far they can be and are being met. That may be one reason why the London Transport Executive and its predecessor, the London Passenger Transport Board, have in the past been accused of being arbitrary, and of ignoring public needs. It would probably be more true to say that in striving for perfection in its services, the L.P.T.B. in the past did on occasions seem to ignore the desires of minorities even although they had been carefully considered. Today at all events L.T.E. has in Sir John Elliot a Chairman who is acutely, and rightly, aware of the importance not only of serving the millions who rely on London Transport, but of explaining to the public, when practicable, the reasons for action which has to be taken.

An attempt to define the term "public interest" in relation to nationalised industries, with special reference to London Transport, was made by Sir John Elliot last week in his address to the Rotary International Conference at Eastbourne. He was speaking on public service as typified by the nationalised industries. The public, he points out, is on both sides of the fence, for it is both owner and customer, and the average man's definition of "public interest" may well depend on which side of the fence he was standing at the moment. On one side as the nominal owner of the industry, he is mainly concerned lest he should be made to meet losses with the taxes he pays, while as the user he is keenly interested in receiving as much service as possible at the minimum cost to himself. It is the attempt to reconcile these two views that makes the management of a public service quite different from that of a private enterprise.

Because Governments and political parties are involved in the setting up of nationalised industries, the public service is subject to all kinds of pressure from many quarters. The Act of Parliament nationalising an industry cannot create a new attitude of mind or of heart. There will always be, Sir John Elliot observes, difficulties in running a public service, particularly in the early stages. In this he shows faith in the future—a faith to some extent justified in the case of British Railways. The Act has usually laid down as a protection for the public, both as owners and customers, that the undertaking shall provide an adequate service and at the same time pay its way, though not necessarily in each year taken singly. Wisely, no Act has yet laid down what exactly is meant by the word "adequate." The day-to-day interpretation is left to the experience and judgment of the management spurred on by public approval (seldom) and public criticism (continuously). He is right in stressing that in the transport industry there is no scientific formula for solving the problem. Only after long experience can operators judge what service ought to be provided.

L.T.E., he explains, assesses both the amount of hardship likely to be involved if a service is not, and the loss likely to be incurred if it is provided. The undertaking provides services at a loss every day. The whole of the Underground and about one-half the bus services fail to cover their full cost when interest on capital is included.

"This illustrates," he adds, "how impracticable it would be to apply everywhere a strict test of profitability when deciding whether services should be provided. If it were, half London would be without public transport."

On nationalised monopolies, he explains that the industry's constitution, as laid down by an Act of Parliament, becomes its charter and provides some form of public control regarding its charges and machinery to deal with complaints. It is often said that, with a monopoly, the public had no alternative but to use the services and that a "take it or leave it" management was the result. This is not really so. "We may be stupid," Sir John Elliot observes of his own organisation, "but we are not wicked. The man-in-the-street can show his disapproval by not using the service at all, or only when he must, such as travelling to and from work." This is actually happening in Canada and the U.S.A. today, largely because of the great number of private motorcars and also "because it is thought to be socially lowering to be seen riding on a bus or coach." London Transport, he states, with the London lines of British Railways, has a monopoly of public transport in the Greater London area. He does not, perhaps, sufficiently emphasise that with the growth of private motoring, use of public transport can be avoided, and is increasingly being dispensed with. There are, as he observes, many competitors for the public's money and spare time, such as television, motoring and hire purchase commitments being the strongest; but the private motorcar for transport to work is a factor seriously to be reckoned with by public transport operators.

He makes some useful remarks on the public relations departments of transport undertakings. Their primary duty, he explains, is "not, as some people think, to write silly excuses to the public and to protect the stupid management from an irate public," though it is their job to answer letters from the public factually and fairly, whether privately or in the newspapers. Their main function, he rightly believes, is to "keep their fingers continually on public opinion in the many ways open to them, and fearlessly to pass on the information to management." In London Transport the Public Relations Officer or his assistant attends all the regular meetings which the operating managers have with their officers, so as to ensure that what the public is thinking is not forgotten or pushed on one side.

The only object of the public service, he concludes, is to serve the public. There is no other duty. Thousands of men and women in the public service are not as far away from the ideal of service above self as some would believe. That is certainly true of a great many in responsible positions on British Railways and London Transport. "There is for many of them," he adds, "a personal satisfaction in knowing that the day's work has been concerned wholly with trying to contribute something essential to the ordinary daily business of living. Public servants do not make fortunes, but they know they are needed and that is the spur. If it were not so our men and women would not go on working year in and year out, in the early morning and late at night, and at weekends when other folk are relaxing or enjoying themselves."

### The American Railway Passenger Problem

THE Interstate Commerce Commission on September 18 announced receipt of a report from one of its examiners, Mr. Howard Hosmer, who was deputed to investigate the passenger situation on U.S.A. railways from all points of view and consider ways and means of reducing the annual loss on passenger services. After spending a year in hearing evidence from railway officers, State regulatory commissions, Government agencies, and other interested parties, the examiner could not recommend any remedy for the downward trend of passenger business. His fact-finding survey of the position ended in a prediction that if railway passenger-miles (other than commutation) continued to decline at the average rate of decrease between 1947 and 1957, parlour and sleeping car service would disappear by 1965 and "coach" service by 1970. Mr. Hosmer could not foresee any development

likely to stop the decline and stabilise the traffic at some lower level than that of the present time.

Railway passenger traffic reached its zenith in 1920, when 1,269 million people were carried for an average distance of 37 miles on individual railways. Passenger miles then rose to an all-time high, except for the war years 1942-46. By 1947, private motorcars and motorcoaches accounted for most short journeys and the number of railroad passengers fell to 703 million, making an average journey of 65 miles. Airlines then flew only 6,075 million passenger miles, against the railroad total of 46,752 million.

By 1957 the scene was transformed. The railways carried only 411 million people, the smallest number recorded since 1890. Passenger miles shrivelled to 25,884 million, 43 per cent below 1947. For the first time airlines flew a larger passenger mileage. Helped by subsidies from Federal, State, and municipal sources, air carriers made inroads into railway first class travel. The number of passengers in parlour and sleeping cars fell by 57 per cent from 30.6 million in 1947 to 13.3 million in 1957. Over the same period the number of railway coach passengers dropped by 53 per cent from 329 million to 154 million. The resultant decrease in coach passenger-miles was 42 per cent, because the average journey lengthened from 84 to 103 miles.

In the first five months of 1958 the number of railway passengers was 7 per cent less than in the same period of 1957, while passenger miles decreased by 15 per cent. Mr. Hosmer naturally infers that the American people prefer travel by private motorcar, except for long journeys. To use the American terms, automobiles now account for 90 per cent of all inter-city passenger movement. Of the 10 per cent left for all public carriers, the railway share may be less than one-third.

In 1947 the railways ran passenger services on 160,650 miles of road. By 1957 they reduced the mileage by nearly 30 per cent to 112,522, about half the miles operated in freight service. Over the same period passenger train-miles were cut by a third from 414,909 to 275,825. Passenger service revenue fell by 12 per cent from \$1,400.1 million to \$1,238.1 million in 1957, when passenger takings were \$735.3 million and \$502.8 million accrued from mail, express, baggage, restaurant car service and other sources.

Despite the fall in traffic and revenue, operating expenses in 1957 were 7 per cent larger than in 1947. Wages paid to engine and train staff were up 22 per cent, representing 19 per cent of passenger service revenue against 14 per cent in 1947. These payments are made on basic-day rules, which have been in effect since 1919 when the average passenger train speed was 20 m.p.h.; such rules are not suited to present-day conditions when the average speed of locomotive propelled trains is 42 m.p.h. As an example of their effect, the "Denver Zephyr," of the Chicago, Burlington & Quincy Railroad, running over 1,000 miles west of Chicago in 16.5 hr., needs the services of eight engine crews, who receive a total of ten-and-one-third basic-days pay.

High labour costs stifle other branches of passenger train service. The Railway Express Agency handled 80.7 million consignments in 1956, compared with 189.3 million in 1947. From this parcels traffic the railroads received \$97 million in 1957 against \$116 million in 1947, a decrease of nearly 16 per cent though higher rates were in force. Express revenue is expected to be 8 per cent lower this year. Since 1947 the loss on restaurant cars has risen from \$25.5 to \$28.7 million, without taking into account the cost of hauling and maintaining the cars or overhead expenses. The railways earned \$291.8 million for carrying mail last year, \$5 million less than the average revenue for the five years 1953 to 1957. Recently, however, the Interstate Commerce Commission ordered an increase in the rates of mail pay for eastern railroads, retroactive to July, 1956. Mr. Hosmer was unable to estimate the effect of this decision on mail revenue for 1958 or any future year.

The developments reviewed above have widened the gap between passenger service revenue and operating expenses from \$425,526 in 1947 to \$733,488 in 1957. About 75 per cent of the expenses relate solely to passenger train working. The balance represents an apportionment of expenses



common to passenger and freight operating. In 1953 railway receipts were a million dollars short of the "solely related" expenses. The shortage swelled to \$113.6 million in 1957 and is estimated to become \$140 million by the end of 1958. Mr. Hosmer concludes that the growing passenger service deficit is real and cannot be conjured away by any adjustment in the rules for separating common expenses. He thinks that the President of the Association of American Railroads, Mr. Daniel P. Loomis, was probably right in saying that passenger train operations would have to be reduced more and more to avoid further loss.

Nobody suggested during the hearings of evidence that electrification would help the railways. On the contrary a principal officer of the Pennsylvania Railroad stated that traffic on its electrified lines between the four great cities of New York, Philadelphia, Baltimore, and Washington had declined from more than 60,000 passengers a day in 1947 to less than 30,000 a day in 1957, so that the unique service was no longer profitable on a total cost basis.

### British Transport Commission Traffic Receipts

THE recession in industry is the chief reason why British Railways merchandise and livestock receipts for the tenth four-week period, that ended October 5, were more than 15 per cent below the corresponding figure for last year, though there may have been loss of traffic from rail to "C" licence road transport. The decline in steel production is reflected in the low mineral traffics, which were nearly 27 per cent below last year's receipts for the period, much the same as for the preceding four weeks; the recent increase in steel production has come too late to be reflected in mineral receipts for Period 10. Coal traffics were an improvement, at £8,614,000, on the preceding period (£8,031,000), but were 10.7 per cent below the 1957 total, which itself was not a satisfactory one.

British Railways total freight receipts for Period 10 at £23,769,000 were well below the £27,372,000 for these four weeks last year. Aggregate railway freight receipts for the first 40 weeks, or more than three-quarters, of the current year were only £247,966,000, compared with £268,136,000 for the same 40 weeks of 1957, a drop of well over £20,000,000.

|                                      | Four weeks to<br>October 5,<br>1958 |        | Incr. or<br>decr. | Aggregate for<br>40 weeks |         | Incr. or<br>decr. |
|--------------------------------------|-------------------------------------|--------|-------------------|---------------------------|---------|-------------------|
|                                      | 1958                                | 1957   |                   | 1958                      | 1957    |                   |
| <b>Passengers—</b>                   | £000                                | £000   | £000              | £000                      | £000    | £000              |
| British Railways                     | 10,495                              | 9,884  | + 611             | 110,102                   | 111,704 | - 1,602           |
| London Transport                     |                                     |        |                   |                           |         |                   |
| Railways                             | 1,796                               | 1,739  | + 57              | 18,685                    | 17,715  | + 970             |
| Road services                        | 4,350                               | 4,541  | - 191             | 35,979                    | 45,831  | - 9,852           |
| Provincial & Scottish                |                                     |        |                   |                           |         |                   |
| buses                                | 4,866                               | 4,473  | + 393             | 47,107                    | 45,074  | + 2,033           |
| Ships                                | 628                                 | 629    | - 1               | 6,149                     | 6,129   | + 20              |
| Total Passengers                     | 22,135                              | 21,266 | + 869             | 218,022                   | 226,453 | - 8,431           |
| <b>Freight, Parcels &amp; Mails—</b> |                                     |        |                   |                           |         |                   |
| British Railways:                    |                                     |        |                   |                           |         |                   |
| Merchandise & livestock              | 6,986                               | 8,254  | - 1,268           | 70,600                    | 82,605  | - 12,005          |
| Minerals                             | 3,102                               | 4,239  | - 1,137           | 34,436                    | 40,610  | - 6,174           |
| Coal & coke                          | 8,614                               | 9,651  | - 1,037           | 93,747                    | 95,696  | - 1,949           |
| Parcels, etc., by passenger train    | 4,137                               | 4,182  | - 45              | 39,699                    | 38,919  | + 780             |
| Collection & delivery, etc.          | 930                                 | 1,046  | - 116             | 9,484                     | 10,306  | - 822             |
| Total freight, British Railways      | 23,769                              | 27,372 | - 3,603           | 247,966                   | 268,136 | - 20,170          |
| Others*                              | 4,427                               | 4,505  | - 78              | 41,790                    | 42,420  | - 630             |
| Total Freight, Parcels, & Mails      | 28,196                              | 31,877 | - 3,681           | 289,756                   | 310,556 | - 20,800          |
| Total                                | 50,331                              | 53,143 | - 2,812           | 507,778                   | 537,009 | - 29,231          |

\* Inland waterways, freight, road haulage, and ships

That all forms of transport are affected by a decline in traffic is shown by the combined freight receipts for

Period 10 from the nationalised road haulage and inland waterway undertakings and from British Railways ships. At £4,427,000 these were 1.7 per cent below last year's total. On the other hand, they exceeded the total (£4,197,000) for the preceding four weeks, which was 3.6 per cent below the 1957 figure. This may represent an improvement only or mainly in ships' freight receipts; but if, as is possible, there has been a recovery in road haulage traffics, the situation of railway freight is the more unsatisfactory.

The passenger receipts of British Railways at £10,495,000 slightly exceed those for Period 10 of 1957 (£9,884,000). London Transport Underground receipts at £1,796,000 exceed the totals for both last year (£1,739,000) and the preceding four weeks (£1,775,000). The drop in L.T.E. road service receipts compared with last year was to be expected, and in accordance with the current trend.

|  | PERCENTAGE VARIATION 1958 COMPARED WITH 1957 |                          |
|--|--|--------------------------|
|  | Four weeks to<br>October 5                   | 40 weeks to<br>October 5 |
| <b>British Railways—</b>   |  |                          |
| Passengers   | + 6.1  | - 1.4                    |
| Parcels  | - 1.0  | + 2.0                    |
| Merchandise & livestock  | - 15.3                                       | - 14.2                   |
| Minerals   | - 26.8                                       | - 14.9                   |
| Coal & coke  | - 10.7                                       | - 2.0                    |
| C. & D. services   | - 11.0                                       | - 7.9                    |
| Total  | - 8.0  | - 7.0                    |
| Ships (passengers)   | - 0.1  | + 0.3                    |
| <b>British Road Services, Inland Waterways and Ships (cargo)</b> | - 1.7  | - 1.4                    |
| <b>Road Passenger Transport, Provincial &amp; Scottish..</b>     | + 8.7  | + 4.5                    |
| <b>London Transport—</b>   |  |                          |
| Railways   | + 3.2  | + 5.4                    |
| Road services  | - 4.2  | - 21.4                   |
| Total  | - 2.1  | - 13.9                   |
| <b>Aggregate</b>   | - 5.2  | - 5.4                    |

## Letters to the Editor

(The Editor is not responsible for opinions of correspondents)

### Buckeye Couplings

October 16

SIR,—I refer to the letter from Mr. A. W. T. Daniel, published in your issue of October 10. Such were the forces of impact in the St. Johns collision that a number of buckeye couplings in the electric train were completely destroyed. This would seem to suggest that there is not really any basis for drawing even the most tentative conclusions as to their possible value for locomotives from that accident.

Yours faithfully,

F. D. Y. FAULKNER,  
Public Relations Officer,  
Southern Region, British Railways

Waterloo Station, S.E.1

### Preserving G.W.R. Diesel Railcars

October 18

SIR,—It is indeed good news that, at the invitation of the Chairman of the British Transport Commission, a consultative panel has been set up to advise on transport relics and their safe housing.

The time seems opportune to draw the panel's attention to the urgent need of preserving one of the Great Western Railway pioneer A.E.C. diesel railcars, now being withdrawn from service after more than 20 years' operation.

G.W.R. diesel car No. 1, dating from 1933, was the pioneer bogie main-line unit in this country and led eventually to a fleet of 38 cars, the later examples of which were the forerunners of the present British Railways fleet.

It would indeed be a tragedy if the early streamline cars, Nos. 1 to 17, were broken up without one of them being preserved in the immaculate and attractive chocolate-and-cream livery in which they first appeared.

Yours faithfully,

WILLIAM F. BOLTON  
Kumasi, Middle Road, Higher Denham, Bucks.



## THE SCRAP HEAP

### Obstruction on Line

A local passenger train hit dustbins placed on the main East Coast line at South Kirby, near Doncaster. No damage was done. Trains were held up for an hour.

### "Shining Morning Face"

President Heuss flew to Gatwick in a new Vickers Viscount. At Victoria Station he entered an open carriage for the equestrian drive to Buckingham Palace. To bridge this gulf between modern and ancient transport, the train between Gatwick and Victoria was hauled by one of those mature but reliable aristocrats, a Southern "Schools" class locomotive [*King's Canterbury*]. . . . They had given it a marvellously clean face on which to carry the British and German Federal Republic insignia. A shining locomotive in London is almost as noteworthy as a State visit.—*"Peterborough"* in *"The Daily Telegraph."*

### New Solway Bridge?

Support by local interests in Cumberland and South-West Scotland for a road bridge over the Solway Firth is a reminder that the railway viaduct over the Firth was demolished in 1935. This structure, between Annan, in Dumfries-shire, and Bowness, in Cumberland, was the chief engineering feature of the Solway Junction Railway, incorporated in 1864 to link the Caledonian at Kirtlebridge with the Maryport & Carlisle at Brayton. The line was opened in 1869.

The viaduct was 1,940 yd. long and consisted of 193 cast-iron spans, resting

on cast-iron columns of rather light construction. It was damaged by freezing in the winter of 1875-76 and, after the great frost of January, 1881, received much more severe damage through being pounded violently and persistently by ice floes. Eventually, 45 piers and 37 girders collapsed. The bridge was reopened in 1884.

Passenger services were suspended during the first world war, but were resumed in 1920. Both passenger and goods traffic ceased as from September 1, 1921, as the viaduct had become unsafe, and the estimated cost of repair was regarded as excessive. Thereafter the viaduct formed a convenient, if illegal, footpath enabling those on the Scottish side to obtain in England the licensed Sunday hospitality denied in their own country. A barbed-wire barricade at the northern end proved a poor deterrent. The "traffic" declined when a Sunday bus service was begun between Annan and Carlisle.

### Selling Stations

The New York Central System recently announced its desire to sell 406 of its passenger stations. So far, 53 have been sold. Some of these are abandoned stations, but in most cases the company has leased back space for its own needs, and the rental it pays to its new owners is less than the taxes it once paid on the property: The stations already sold are being used by small businesses and as meeting halls. The New York Central already receives a very large revenue from rentals for its property in New York City.

Other American railways have also begun to sell stations where they are liable to tax and their extent exceeds present railway requirements. In some States, stations are tax-free, which encourages railway companies to retain installations that otherwise would be too costly to maintain.

The President of the New York Central, Mr. A. E. Perlman, is reported to have suggested sale even of the Grand Central Terminal, New York, or at least of that part of it which deals with long-distance passenger trains; these would terminate at a point outside the city, with bus transport for passengers from and to the centre.

### Train Named After Driver

The only train named, according to tradition, after the man who once drove it, is the "Fish" of the New South Wales Government Railways. In 1863, when the N.S.W.G.R. was opened to Penrith, a driver, John Heron, was posted to Penrith shed; one of his duties was to drive the fast morning train to Sydney and bring it back at night. He was a man of strong personality who made big demands on his associates, and his mates in the shed, who did not like him, nicknamed him the "Fish" (her-ring). The staff at Penrith picked up the name from the shed staff and would say, "Here comes the Fish" when Heron drove his engine into the station. The line was extended, as were the morning and evening trains, from Penrith to Mount Victoria in 1868, and the pair of trains was known as the "Fish" by the 1870s. Not long afterwards, Heron was promoted to Inspector. Over the years these trains were hauled by many classes of steam locomotive, until electrification. Thereafter, the motive power was 3,850-h.p. Co + Co "46" class locomotives built by the Metropolitan-Vickers Electrical Co. Ltd. The stainless-steel multiple-unit stock which has worked the "Fish" since mid-September is described on page 516.

### Autumn Ganger

When October's gusty gales  
Chase the clouds across the skies,  
Running up and down the scales,  
Through the tree-tops, Orpheus-wise,  
When the clocks have been put back,  
After cheating half the year,  
Then the men upon the track  
Feel that winter's drawing near,  
As, with calculated stride,  
They patrol each treasured length  
And survey, with proper pride,  
Products of their skill and strength,  
When they see the mist arise  
Where the line runs round the bend,  
They will scan the sunset skies  
For whatever may portend.  
When at day's end they repair  
To their firesides warm and bright,  
Join the lengthmen in their prayer:  
"May there be no fog this night!"

A. B.

### Diesel Haulage on Great Eastern Main Line



Photo]

[S. Creer

Up "Scandinavian" descending Brentwood Bank headed by 1,250 h.p. diesel-electric A1A-A1A locomotive No. D5507

## OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

### RHODESIA

#### Development of S.E. Line

Mbizi, about 75 miles from Malvernia on the South-East Railway, was opened recently as a commercial station. It is expected to handle increased traffic, particularly sugar produced at Triangle. Rutenga, on the same line, has been equipped with a goods shed and loading bank which includes facilities for cattle. This station is on the main road from Fort Victoria to Beitbridge, and as the two places are served by road motor service, a direct road-rail link with Lourenço Marques is available.

#### State of Emergency

A state of emergency was proclaimed recently along the entire railway line reserve in Northern Rhodesia. The death penalty has been prescribed for attempts to damage railway lines and rolling stock. Possession of any implement capable of damaging railway property by unauthorised persons is punishable by life imprisonment. Unauthorised entry to railway property or on to the line is punishable by a fine of £100 or a sentence of two years' imprisonment.

These drastic measures follow the recent derailment of a mixed passenger and freight train, the second derailment within 12 months.

The Government suspects that railway saboteurs are responsible for these derailments.

### FRENCH EQUATORIAL AFRICA

#### Rail Link for Manganese Ore

Preliminary work on the plans to build a rail connection to the manganese deposits of the Compagnie

Minière de l'Orooué is almost complete.

A satisfactory method of carrying the mineral to a port from which it can be shipped is the only real problem connected with these deposits which are situated in the Moanda area some 30 miles from Franceville. The ore itself is particularly rich, having a manganese content of some 40 per cent.

It has been decided to build a conventional rail connection to the line already serving the port of Pointe-Noire. The mines will be linked to the new line by an overhead cable railway some 55 miles long, although it is possible that at some time in the future this will be replaced by a conventional type of railway track. Work is expected to be completed by late 1961 or early 1962.

### SOUTH AFRICA

#### S.A.R. Housing Scheme

South African Railways £20,000,000 scheme, begun in 1955, for the building of 6,000 houses for railway employees is nearing completion. So far 5,384 have been occupied. Each house is provided with nine fruit trees, two ornamental trees, and 12 shrubs.

### WESTERN AUSTRALIA

#### Containers for East-West Traffic

The use of containers to carry interstate goods over the 1,500 mile Trans-Australian route has recently been initiated, with marked success. The first three containers were loaded in Sydney, transported by road to Mile End, South Australia, then conveyed by rail over the South Australian, Commonwealth and Western Australian systems, arriving in

Perth, Western Australia, eight days after loading. This cuts normal transport times of interstate goods by two thirds.

Fast goods trains, operating between Port Augusta and Perth, and running at almost passenger speed are being used to advantage for this traffic. This service, together with the use of containers, is competing successfully against the road hauliers using "piggy-back" transport.

It is considered that the container method has all the advantages of the "piggy-back" system but is far more economical to the client. With "piggy-back," a fully loaded motor vehicle with its driver has to be conveyed by rail.

Twenty-four containers are being used on the East-West service at present. They are owned by Rudders Limited, transport agents. These containers are made of steel and plywood with a cubic capacity of 850 cu. ft. Each carries a payload of 7½ tons, with a tare weight of 1 ton 3 cwt. Their dimensions are 14 ft. 4 in. in length, 7 ft. 10 in. high and 7 ft. 8½ in. wide. Three such containers are accommodated, fully loaded, on the Western Australian Government Railway Q.F.C. type wagon.

Other transport agencies have intimated their intention of manufacturing containers for service on the East-West run. At Parkeston, the Commonwealth railway terminal, the containers are transferred to Western Australian Government Railway wagons by an overhead gantry. On arrival in Perth, these wagons are placed to delivery sidings and the containers lifted by mobile crane from the rail wagons on to transport agents' motor vehicles which convey them to the agent's depot, or if necessary, direct to warehouses.

### INDIA

#### Fast Freight Trains

Seven goods trains are now booked over the 126-mile section between Gaya and Moghalsarai on the Grand Chord line of the Eastern Railway in about half the time taken formerly. As against the previous running time of 10-11 hr. one way, the return trip is now made in 12-13 hr. The average speed of these trains is 22 m.p.h. compared with the average of 9.6 m.p.h. for goods trains of the Eastern Railway.

#### Second Jumna Bridge Near Delhi

Final location survey of the Ghaziabad-Tughlakabad link which would cross the Jumna a few miles below Delhi by a second bridge has been completed. The Northern Railway administration has been finalising the report and estimates.

#### Howrah-Burdwan Electrification

Electrification of the Howrah-Bandel-Burdwan main line at 3,000 V. is making satisfactory progress. Work recently



Three fully loaded containers on a Western Australian Government Railways Q.C.F. type wagon

had been completed up to Saktigarh and final adjustments were being made on the two main tracks between Saktigarh and Burdwan. Conversion work in the Burdwan Yard is also making progress.

All the 16 multiple units ordered from Germany have arrived, also some Swiss units and three locomotives ordered from Japan.

#### Travel on Footboards of Trains

Over 200 people fell and were killed while travelling illicitly on the footboards of trains during the 18 months from January 1, 1957, to July 3, 1958. Of these, two died after being struck by a signal which had been fixed inside the specified clearance.

### UNITED STATES

#### Standardised Hopper Wagons

As a standardisation measure, the Pennsylvania, Chesapeake & Ohio, and Norfolk & Western Railroads, which between them own 165,000, or 31 per cent, of the bogie hopper wagons in the U.S.A., have jointly designed a standard 70-ton hopper wagon.

The three railways' present standards show differences in dimensions ranging from  $\frac{1}{4}$  in. to 4 ft., and in the various rolled sections used in manufacture. The new standard wagon is 41 ft. long overall, 11 ft. high from rail to eaves, and 12 ft. 1 $\frac{1}{4}$  in. in maximum height, and 9 ft. 9 $\frac{1}{2}$  in. in inside width. Uniform sizes of rolled sections, plates and sheets will be used in construction. Any specialities required, such as bogies, doors, door frames, and hand brakes, will be interchangeable.

#### Safety of Rail Travel

By far the safest type of travel in the U.S.A. is the railway. During 1957, the fatality rate per 100 million passenger

miles was 2.6 in motorcars and taxis, 0.14 in motorbuses, 0.12 in aeroplanes, and 0.07 in trains. During the year 25,700 people lost their lives in accidents to cars, 70 in buses, 31 in airliners, and 17 in trains. The chances of losing one's life by accident in a U.S.A. train during 1957 were one in 1,425,000,000.

### ARGENTINA

#### Extension of Underground Lines

Buenos Aires Transport has signed a contract with Siemens Bauunion for the extension of the Constitución underground line to Avenida La Plata, at a cost of 48,000,000 pesos. The extension will be completed by 1961, and it has not yet been decided whether there will be an intermediate station at Quintino Bocayuva.

#### Local Manufacture of Railway Material

Representatives of the Canadian Car Co. Ltd. and the Canadian Steel Company have been in contact with the Government to investigate the possibility of erecting a factory for the building of wagons and spare parts. They have made an extensive trip through the provinces to find the most convenient location for the factory.

The Kawasaki Rolling Stock Company of Japan has also offered to erect a U.S.\$53,000,000 factory for the construction of railway and shipping material.

### BRAZIL

#### Improvements in Progress

Maintenance shops for diesel-electric locomotives are being provided at Lavras, for the Rede Mineira; at Ponta Grossa and Cornelio Procopio, for the Parana-Sta. Catarina Railway; at Bauru and Campo Grande for Noroeste do

Brasil; at Triagem for the Leopoldina; at Sao Luis for the Sao Luis-Teresina Railway; and at Sao Francisco for the Leste Brasileiro.

Rolling stock on the Rede Mineira Leopoldina, Noroeste do Brasil, and Parana-Sta. Catarina Railways, is being fitted with standard type air brakes, to facilitate through running.

### JUGOSLAVIA

#### Conversion to Standard Gauge

The narrow-gauge transversal line Stalac-Cacak, south of Belgrade, is being replaced by a new standard-gauge line. Since conversion of the sections Stalac-Krusevac and Kraljevo-Cacak in 1955-56, a third 22-mile section, from Krusevac to Vrnjacka Banja, has now been opened to traffic. This leaves only a 14-mile section from Vrnjacka Banja to Kraljevo still to be completed.

### WESTERN GERMANY

#### New Locomotives

Two new classes of line-service diesel-hydraulic locomotives are under construction for the German Federal Railway. Six, of Class "V100," are B-B machines now being completed by MaK, and have a 1,100-b.h.p. Maybach engine, though the design enables a 1,300-b.h.p. engine to be put in at some future date if desirable. Weight is 64 tons. The second type is the new standard 70-ton B-B of Class "V-160," the first six of which are being built by Krupp. Each is to have a single Maybach or Daimler-Benz engine of 1,500 b.h.p., but the design permits of the installation of engines up to 1,800 b.h.p. At the moment the Mekydro K.184 model is the only hydraulic transmission available for this locomotive type.

### Publications Received

*Die Hedschas und Bagdadbahn (The Hedjaz and Bagdad Railway).* By H. Pöncke. Düsseldorf: VD 1 Verlag, Bongardstrasse 3. 8 in. x 5 $\frac{1}{2}$  in. 44 pp. Illustrated. Price DM 6.60.—This booklet describes the construction of the railways in the old Ottoman Empire designed to connect Constantinople with Bagdad and Medina, and ultimately Mecca, work in which German political and commercial influence was very prominent. Its main purpose, however, is to honour the memory of the civil engineer concerned, Heinrich August Meissner. Born in Leipzig in 1862, he spent the greater part of his life in the service of the Turkish Government and died in 1940. The process is described by which the Turkish authorities were led to embark on building the lines, the strategic considerations which awakened interest in other countries, the physical characteristics of the various sections and so on, using many official documents. The text is clear and concise.

*Twenty Locomotive Men.* By C. Hamilton Ellis. Hampton Court, Surrey: Ian Allan Limited, Craven House. 9 $\frac{1}{2}$  in. x 6 in. 214 pp. Illustrated. Price 25s.—In an age when sharply defined characteristics distinguished the railways of Great Britain, their locomotive engineers were often individualists who enjoyed almost absolute power. Their achievements are described in these essays. The author has covered 140 years, from the birth of William Bridges Adams in 1797 to the death of Sir John Aspinall in 1937. The diverse personalities range from autocrats, such as Dugald Drummond, to men of quieter but none the less commanding character, such as Patrick Stirling.

*Work Study and You.*—A new illustrated booklet on work study is being issued by the British Transport Commission to its staff. The booklet, the first on this subject to be produced by the Commission, defines work study and its purpose in a simple way, and explains its application to the Commission's various undertakings. In

addition to separate chapters on the scope, operation and organisation of work study, the booklet contains a special section which shows how work study investigators go about their jobs.

*Diesel locomotives.*—Six standard diesel locomotives from 150 to 600 b.h.p., all with Voith hydraulic transmission, are made by the Soc. Alsacienne de Constructions Mécaniques at its Graffenstaden (Bas-Rhin) works in France. Up to 400 b.h.p. they are unusual in having the final drive by chains; but the two three-axle models of 400 and 600 b.h.p. have jackshaft-and-rod drive. All are described in a six-page folder, "Locotracteurs & Locomotives Diesel."

*Supertyfon Horns.*—This well-known compressed air warning horn used in diesel and electric locomotives and railcars, is described in English, and with drawings and full particulars of the six standard models now being made, in a brochure, No. 682, obtainable from the makers, Kockums Mekanska Verkstads A.B., of Malmö, Sweden.



## Automatic Train Control

*Cab signalling and other systems used by European and U.S.A. railways*

(By a correspondent)

**O**UTSIDE Great Britain, the U.S.A., and certain countries of continental Europe, including perhaps the U.S.S.R., progress in developing A.T.C. has been slow, no doubt because capital costs, even for the most simple systems, are high and are unlikely to be fully offset by the direct costs of those accidents which might thereby be avoided. Against this must be set the value of an accident-free record.

### I.C.C. Influence in U.S.A.

Section 26 of the Interstate Commerce Act of 1920 granted the Interstate Commerce Commission (I.C.C.) general authority to order railways in the U.S.A. "to install automatic train-stop or train-control devices or other safety devices." Up to that time developments in the U.S.A. had been slow. Three types of train-control equipment were in service on a limited scale, and certain other systems were on the market. In 1922, the I.C.C. issued an order obliging a number of railways to install A.T.C. in certain areas, and, to expedite development, 49 different railways each made an installation in 1922 of approximately 100 miles.

Progress thereafter was more rapid. Some of the experimental installations were discontinued. Other railways extended the installations to cover all their principal routes. In 1923, the Pennsylvania Railroad conducted trials with a continuous inductive system on a branch line, and in 1926 it began to use the "coded" system, whereby a special "coded" current is passed through the normal running rail; this code varies according to the state of the line ahead. The code is picked up by any equipped locomotive passing over the line and translated into a visible colour-light signal in the cab. Automatic brake application is not normally included; reliance is placed on a siren warning device requiring acknowledgment. More recently the P.R.R. has been installing speed control embodying a train-stop device on its main lines. In some cases cab signalling operates without wayside signals, but in others it merely repeats the signal aspects.

The Pennsylvania was the pioneer with continuous cab signalling and now has some 3,700 track-miles so equipped. Other railways have followed its lead and for the whole of the U.S.A. such signalling was, at the beginning of 1958, installed on 3,577 locomotives operating on 8,600 track-miles. In addition, 6,117 locomotives operating on 17,035 track-miles were equipped with automatic train-stop or train-control devices, including, in some cases, speed control, which is positive in application according to the state of signal aspects ahead. Speed control in the American sense should not be confused with approach

control operating on colour-light signals in Great Britain.

In 1947, the I.C.C. issued a new signalling order which included a provision that all mileage over which trains were operated at 80 m.p.h. or more must be equipped with train control, cab signalling, or some form of automatic train stop. Although the order was applied with discretion and some exceptions were granted, the effect was to speed up development of A.T.C. in the U.S.A. Since 1947, additional lengths have been equipped with continuous cab signalling including 1,600 track-miles of the Union Pacific and 200 of the Pennsylvania.

### Cab Signalling Discontinued

Some American railways have obtained I.C.C. permission to discontinue automatic cab signalling. On the Norfolk & Western it was withdrawn over some 250 track-miles in 1956. In this case the Commission took the view that C.T.C. was sufficient safeguard. There are two schools of thought in the U.S.A. as to depending exclusively on continuous cab signalling. It is claimed that such a complete method of keeping drivers continually informed of signal aspects ahead makes it almost impossible for a signal to be passed at danger. In fact, accidents have occurred in the U.S.A. on lines so equipped, because drivers ignored cab signal indications. This led the Pennsylvania to add speed control apparatus. There is perhaps a growing realisation in America that train-stop and train-control devices, similar to the various types of apparatus found in Europe, are not only cheaper to install and maintain, but also in some ways more dependable. The net figure for track equipped with continuous coded cab signals has tended to fall slowly, but track-miles equipped with train-stop and train-control devices have shown an appreciable rise.

On the Continent of Europe, A.T.C. has been developed extensively in France, Germany, and Switzerland, and short or experimental lengths of line have been equipped elsewhere.

### Cab Signals in France

Even before the war of 1914-18, certain French main-line railways were using a form of audible cab signalling. This was subsequently extended. By the time the French National Railways (S.N.C.F.) were formed at the beginning of 1938, all the important main lines were so equipped, and virtually all the locomotive and railcar stock was fitted with audible cab signals.

In principle, the French apparatus consists of a ramp *crocodile* placed centrally between the running rails at the distant signal, with which a brush

on the locomotive makes contact. The earlier installations were of the single-indication type. Only the ramp was energised, and a whistle was sounded in the cab when the signal showed a caution indication.

A serious drawback was that if the apparatus failed the driver could take the omission of the whistle as a false "clear" indication. To overcome this, at least in part, the apparatus was converted to the double-indication type under which the ramp is always energised, and the polarity of the current is reversed when the signal changes from caution to clear. When passing a distant signal at caution, the driver now hears a loud warning whistle; but if the signal is at "clear" he hears only a dull sound made by escaping air.

### No Automatic Brake on S.N.C.F.

This system differs notably from that in use on British Railways and from those referred to below in Germany and Switzerland, in that there is no provision for any automatic application of the brake. The device is simply an audible-warning cab-signal. It does not relieve the driver of his basic responsibility for observing wayside signals. The signal indications, however, are recorded on the speed-recording graph with which every locomotive is equipped. When a distant signal is sighted at caution the driver must operate a vigilance lever, which operation also is recorded on the graph. Thus a check is available on the driver's acknowledgment of the aspect of the signal.

Just before the war of 1939-45 an experiment was carried out with the provision of a second ramp which enabled three indications to be given in the cab on track equipped with three-aspect colour-light signals. In 1936 the former French State Railways installed continuous coded cab signalling of the American type on its double-track main line between Caen and Cherbourg. These S.N.C.F. systems without train-stop equipment are not automatic train control in the strict sense of the term.

### Rigid Control in Germany

Quite different principles were followed by the German State Railway before 1939. A.T.C. equipment of the electro-magnetic inductive type had been installed on virtually all main lines over which high-speed trains ran. The same type of equipment has been continued since the war by the German Federal Railway. By 1952 A.T.C. was in operation on 2,073 route-miles, of which 62 were single track.

The apparatus used on the locomotives provides for speed control as well as automatic braking to a stop. There is no cab signal; warning is given



to the driver only when the automatic equipment comes into service. There are three separate sets of ground apparatus for each distant signal and its related stop signal. The first group of ground apparatus is situated alongside the distant signal. When this is at caution the driver must operate a vigilance lever. If he fails to do so within 5 sec., automatic brake application takes place. The next ground apparatus is situated rather more than 250 yd. in rear of the stop signal to which the distant signal relates. If the stop signal is at danger, the brake application is made automatically if speed has not been reduced below a certain figure. The third ground apparatus is situated at the stop signal and produces a full brake application if this signal is over-run at danger.

No information is available as to recent developments in Eastern Germany, apart from experimental work in conjunction with the Russian railways mentioned below. The main lines in what is now Eastern Germany were of course equipped by the prewar Reichsbahn with equipment similar to that now seen in Western Germany. On the suburban electrified lines in the Berlin area a mechanical type of train stop is employed. These lines, however, are used almost exclusively by multiple-unit electric trains; conditions are somewhat similar to those on the surface lines of London Transport.

A magnetic form of train stop is in use on the Hamburg Elevated Railway.

#### Signum System

The automatic train control system in use on the Swiss Federal Railways is similar in principle to that adopted in Germany. When first installed in the 1930s, however, it only functioned at the distant signals. Investigations were carried out to evolve a fool-proof system, and the Swiss signalling industry developed the Metrum system, more generally known in Switzerland as Signum.

The Metrum (or Signum) system is based on the transmission of signals by induction. This eliminates the need for any physical contact between the apparatus on the permanent way and the train. At first apparatus was installed only at the outer distant signals. Later it was extended to the inner distant signals repeating the starting signals, and to the starting signals themselves at stations. By the end of 1952, apparatus had been installed at some 3,500 signals, so completing the equipment of all electrified lines.

When a distant signal is passed at caution, or a starting signal at danger, an impulse is transmitted to the train. This results in a warning whistle being sounded in the cab which can be stopped by the driver pressing a vigilance button. Failure to do so immediately results in a full emergency brake application after the train has travelled about 60 yd. Operation of the vigilance button prevents the emergency brake application. Subsequent necessary action is left to the driver. When the

signal is "clear," no indication is given in the cab. If a fault develops, the warning whistle sounds, after which the vigilance button cannot be used and the equipment must be disconnected before the train can proceed.

One weakness of the Signum arises from the possibility of a driver using his vigilance button and then disregarding the signal. A serious accident due to this cause occurred in 1951. As a result, investigations have been carried out into the desirability of eliminating the button and replacing it with apparatus which would check whether a driver had obeyed the warning or danger aspect of a signal, and if he had not done so, would apply the brakes automatically.

A development of the Signum system has been installed in the Belgian Congo.

#### Other European Experiments

While the Belgian National Railways have no system-wide installation of automatic train control, they have equipped certain of their main lines with cab-signalling equipment of the French *crocodile* type. This is particularly so on those lines running to and from the French frontier and over which French locomotives work. A certain proportion of the Belgian locomotive stock has also been equipped; this is to some extent essential as Belgian locomotives run into France over S.N.C.F.-equipped lines.

Even before the last war, the Italian State Railways experimented with a form of cab-signalling equipment, and these tests have continued on a limited scale during post-war years, in particular on the Rome-Naples and Bologna-Florence lines where there is automatic signalling controlled by coded track circuits. Trials are also taking place currently with various forms of A.T.C., giving either fixed approach warning to signals or repeating the aspects of signals in the cab, combined with speed control, brake application, and the use of a vigilance button.

The Rome Underground, which is only partly in tunnel, uses plain train stops, with provision for installation of cab signalling if desired at a later date.

Experiments have at various times been made with A.T.C. in Poland, Czechoslovakia, and Yugoslavia. As far as is known, prewar investigations have not been actively pursued. In both Poland and Czechoslovakia, the apparatus used was a mechanical one known as the Kofler system of automatic control. This works through an arm on the locomotive cab, or on the roof of the vehicle, engaging another arm working in conjunction with the fixed signals. The train brake is applied if a signal is passed at danger. Other experiments with the Kofler system took place before the war in Germany and Italy, but although the results were said to have been satisfactory, modern techniques and the growing use of inductive systems would seem to limit its future prospects.

Mention should also be made of the continuous coded cab signalling with

speed control on the Stockholm Underground. This was chosen because mechanical stops were unlikely to function effectively in the Swedish climatic conditions. Contrary to opinion in many other countries, its capital cost is claimed to be less in Sweden.

#### Trial Systems in Asia

From both Turkey and Egypt there were reports in 1951 of trials with the Kofler system. Plans were announced for short sections of line to be equipped, but no announcement has been forthcoming of further extensions.

During 1957, the Persian State Railways placed an order for apparatus to equip their southern route with a simplified form of A.T.C. This was an approach warning device normally installed at braking distance in rear of the home signal, thus becoming, in effect, a form of distant signal.

In 1946, a committee was set up in India to consider the problem of A.T.C. in respect of the whole country, and it was decided to carry out experiments with *inter alia* the Hudd intermittent inductive system as used on the London-Southend line, and with an adaption of the Great Western Railway ramp contact system; in the latter experiments coloured visual signals were used in the locomotive cab, whilst the ramps had to be placed at the side of the track instead of in the centre.

In 1953 tests were reported of a modern inductive system of A.T.C. on an electrified section of line between Ghatkopar and Thana.

Two locomotives of the Ceylon Government Railway were fitted experimentally with A.T.C. apparatus in 1930, but again no extension appears to have taken place.

#### Recent Russian Developments

It was announced in 1946 by the U.S.S.R. Railways that 7,150 track-miles were to be equipped with automatic train stops and cab signalling. The apparatus incorporated a vigilance button enabling the driver to cancel the automatic brake application after receipt of a warning signal. No details are available as to implementation of this programme, but technical improvements have recently been incorporated in the equipment to which differential speed control has been added. According to the signal aspect, speed must be immediately reduced to specified limits, and failure to do so results in a full brake application. If speed is correctly reduced the speed control equipment is cut out. It seems that the recent developments, and further current investigations, have been carried out in conjunction with the State Railway of Eastern Germany. There is much similarity between the latest type of equipment introduced in the U.S.S.R. and that brought into use on the prewar German Reichsbahn.

In the main this article has been concerned with A.T.C. on main lines. Most urban railways use automatic train-stop equipment, very frequently of the trip-cock type used by London Transport.

## New Station at Rotterdam

*Replacement of Delftsche Poort Station destroyed during last war*



*Main concourse of Rotterdam Central Station, showing ticket windows (right) and exit to western side forecourt (centre)*

**C**ONSTRUCTION of the new Rotterdam Central Station of the Netherlands Railways, served by 1,500-V. d.c. electrified lines, was started in May, 1954. It takes the place of the former D.P. (Delftsche Poort) Station destroyed during the last war.

Opportunity has been taken to re-arrange tracks, and re-align the railways to the north and east of the city. The station is at a junction point of the main line from Amsterdam, The Hague, and Rotterdam to the south of the Netherlands, Cologne and beyond, and to Antwerp, Brussels and Paris, and of the main route from Hook of

Holland and Rotterdam to Utrecht and North Germany and Scandinavia.

### Architecture

The architectural features of the main façade of the station, some 400 ft. long, are of a type seen increasingly since the war, not only in the Netherlands but in many parts of Europe, with a completely glazed street front. This central portion is flanked by wings containing railway offices and service sections. Light coloured Beier's granite is used for the office wings, while the central glazed section is edged with black basalt stone. This material is also

carried along the lower faces of the wings at a short distance above street level and continued round the canopied side entrances, which are surmounted by ornamental plaster designs and facings. The roof of the main concourse is gently curved, and both it and adjoining spaces are lighted indirectly.

### Station Layout

The main concourse is at street level, with subways leading off to the six platforms. The platforms are reached from the subways by single flights of steps. To the right of the main area there is a park for 3,500 bicycles, and an inquiry office. Facing is the luggage office, with its own subway, and lifts to the platforms. The 14 ticket windows are in the centre, with the entrance and exit barriers to the left.

The left luggage facilities are located on the extreme left, with an exit to the western side forecourt, where taxis and private cars are accommodated, and from which a subway is being built through to the thoroughfare, known as Stationsingel, on the north side of the line. There are also a hairdressing saloon, flower shop, tobacco shop and bookstall and, in the east wing, a foreign exchange and travel bureau. Individual footway accommodation is below the west wing itself. Passengers with bicycles can reach the park from the eastern forecourt by a slope, and on the south-east corner there is to be a large bus station, which will not be completed until 1960. The northern faces of the two wings serve as a wall against the first platform, below which there is some staff accommodation.

The greater part of the station is now in use and the remainder is expected to be complete in the very near future.



*Main façade, showing glazed front of concourse, and office accommodation on either side*

## Increasing Capacity of Johannesburg-Durban Main Line

*Progress with realignment on the section between Kaydale and Volksrust*



New Vaal River Bridge under construction with old steel single-track bridge on right: the arches of the new bridge are 60 ft. dia.

**G**OOD progress has been made with the work, started at the beginning of 1956, on the Transvaal portion of the Durban-Johannesburg main line. This whole section of the line stretching over a distance of 135 miles is being improved in standard at a total cost of some £8,950,050. The work is expected to be completed by the end of 1959.

A new line is virtually being built for the whole of this long stretch and large new sections between Standerton and Volksrust have already been opened to traffic. The new line is in close proximity to the old line, but is on an easier gradient and it cuts straight through hills and over embanked valleys to run as straight as possible. This straightening of the line entails the building of tunnels at Kraal, Balfour, Koppie Alleen, and Palmford to a total length of 11,700 ft. and when completed will result in a shortening of the line by 12 miles.

All bridges have been designed to take double tracks, embankments are being built for a single line while cuttings through rock are built to double line formation. The existing gradient is being improved from 1 in 70 compensated to 1 in 80 compensated, while the minimum radius will be 40 ch. The classification of the new line will also be raised from a grade 1A to a grade 1 with a resultant increase in the maximum permissible speed of from 55 to 65 m.p.h.

Some of the earthworks, culverts, station buildings, all the bridges as well as the tunnel, 43 ch. long, near Balfour, are being done by contract. So far 26 major contracts have been let to private contractors. The resident engineer in charge of the work is stationed at Standerton.

By the end of August a total of 5,300,000 cu. yd. of earthworks were completed with 426,000 cu. yd. during the best month, and 68,000 cu. yd. of concrete had been cast, excluding tunnels which amount to some 25,000 cu. yd.

### Kaydale-Fortuna Section

An entirely new station entailing approximately 350,000 cu. yd. of earthworks is being built at Heidelberg, while the line between Kaydale and Fortuna is being completely relocated to improve its standard and alignment. This entails a tunnel of just under one mile long cutting under the road and the present

line at Kraal Station. It is estimated to cost some £285,120 and will shorten the distance between Kaydale and Fortuna by about  $3\frac{1}{2}$  miles. This tunnel is being driven in very poor material necessitating concrete lining as the work proceeds. To speed up the work a vertical shaft has been sunk at the centre through the roof of this tunnel to track level, some 136 ft. below the surface. By excavating in both directions away from the shaft and from both outer ends of the tunnel towards the shaft, work is carried out on four faces simultaneously, round the clock on six days a week.

In addition to Heidelberg Station two other stations, Houtpoort and Kraal, are being relocated, but Spruytsrus Station is not being replaced. By the middle of August approximately 900,000 out of a total of 1,200,000 cu. yd. of earth had been moved in this section.

The work in the Fortuna-Sprucewell section entails the relocation of Balfour Station and the building of an overhead bridge at the point where the road crosses the line, and a tunnel 43 ch. long near Balfour.

In the Sprucewell-Standerton section both Elmtree and Teakworth Stations are being relocated and the stations at Greylingstad, Val, Cedarfont and Holmdene are being re-modelled. Considerable difficulty is being experienced on this section with pot-clay necessitating special selection of materials for embankments, while in a number of cuttings the clay has had to be removed to a depth of 3 ft. below formation level and back-filled with good material.

### Long-Welded Rails

It is the intention to lay the sections from Standerton to Kaydale with 519-ft. long-welded rails on concrete sleepers.



South portal of Kraal Tunnel, showing arrangement of ventilating fan mixer and other excavation services





*Kraal Tunnel under construction, showing temporary ventilator pipe*

The rails will be Thermit welded on site into half-mile lengths and spliced joints inserted every half-mile to cope with the expansion and contraction of each section.

#### **Standerton Goods Yard**

Another aspect of the work is the extension and re-modelling of the goods yard at Standerton including a new goods shed, catering block, a station building and a power signalbox. Separate new overhead steel footbridges spanning the tracks are being built for Europeans and non-Europeans while a subway for handling baggage has already been completed. A road subway leading to the industrial area has been built immediately south of the station; traffic on the road between Johannesburg and Durban will pass through a subway under the tracks just north of Standerton Station.

The work on Standerton Station is expected to be about 60 per cent complete by the end of this year.

A reinforced concrete open spandrel arch bridge consisting of six 60-ft. spans is being built immediately south of Standerton across the Vaal River. The bridge deck, which has been designed to carry double tracks, is about 70 ft. above water level. The rail level on the new bridge will be 14 ft. higher than that on the old bridge. It is being built by contract at a total cost of approximately £80,000.

A new station building has been built on the old site at Firham Station with a junction to Vrede in the Orange Free State. The existing level crossing on the road north of Firham Station is being eliminated by an overline road bridge, while the level crossing on the same road near the Vaal River bridge south of Standerton will be replaced by a road subway.

Five new small deviations have been built on this section and a completely new station building has been erected on the old Rusthof Station site. A new station has also been built at Platrand

on a new site and as a result of the deviation of the line two further level crossings on the Johannesburg-Durban roads were eliminated near Platrand. When the whole of the line between Union and Volksrust has been completed altogether 13 level crossings will have been replaced by grade separation structures.

A new station has also been built on the old station site at Kromdraai.

Between Rusthof and Beechwick, new stations on new sites have been built at Perdekop and Palmford. Other works on this section include a 40-ft. arch bridge across Marksgraaffspruit, a tunnel nearly one mile long on a turn north of Palmford Station, a road subway south of Perdekop to cater for road traffic to Vrede, a crossing interloop at Koppie Alleen, and a tunnel approximately a quarter of a mile long which was first used on June 13 this year and is the first ever to be built in this area.

Work on the Beechwick-Volksrust section of the line which has been opened to traffic includes a new deviation and reinforced concrete bridges: Sassenbergspruit, Joubertspruit, Willoospruit, and Sandspruit, a new station on a new site at Sandspruit and a new station at Vooruitsig for trainworking only. A new overline road bridge has also been built immediately north of Sandspruit Station.

#### **Volksrust Station**

Another aspect of the work was the extension and re-modelling of the goods yard at Volksrust. Both the goods yard at Volksrust and Standerton, but Volksrust more particularly, have become railway bottlenecks as the result of the increase in traffic. Volksrust has been so congested at times that train loads have had to be staged at neighbouring stations.

The re-modelling work here includes six additional tracks in the up yard, cattle accommodation, a power signalbox, a building for the staff, a communications building, a lamproom and a bridge extending right across the yard divided into two lanes to provide facilities for both Europeans and Europeans. Of this work, 95 per cent has already been completed and the remaining deviations between Volksrust and Standerton will be complete by the end of the year.

Road subways have been built to carry three streets underneath the line at Volksrust, while an overline bridge has been built at Dan Pienaar Street.

PASSENGER SERVICES TO BE WITHDRAWN FROM CINDERFORD BRANCH.—British Railways, Western Region, has announced that the passenger train service between Gloucester and Cinderford is to be withdrawn from November 3. Halts at Bullo Cross, Upper Soudley, Staple Edge, and Ruspidge will be closed, but Cinderford Station will remain open for parcels traffic. Bus services operate in the area.



*Volksrust up yard after re-modelling, showing (left), old station buildings on the island platform*





the shelf and table are edged with stainless steel and covered with blue-grey check plastic.

The counter of the buffet is also covered with blue-grey check plastic; the sloping front panels are of sky-blue matt plastic. In the bar the fascia above the counter and up to the ceiling is white with a soffit of sky-blue matt plastic and a lower fascia panel of white.

The back bar is equipped with shelves for bottle display. The shelf at counter height is covered with blue-grey check plastic, those below in white. The shelves above counter height are of glass behind which are mirror panels, and the back panelling below counter height being white plastic.

The buffet counter area is illuminated by concealed electric lighting directed at the back bar display. The lighting in the buffet and saloon is by electric roof lamps with reflectors, and warmth is provided by bodyside convactor electric heaters.

Two bodyside doors are fitted in the buffet, which can be used as exits by the passengers in case of emergency. Double swing self-closing doors and draught screens are fitted at each end of the car and adjacent the screens, vertical heaters are recessed into the ends of the coach.

The roof, bodyside, ends and floors are all insulated. The underframes, which are of all-welded construction, are similar to those of the British Railways standard design, and each is equipped with full Westinghouse electro-pneumatic brakegear.

#### Water Supply

A 120-gal. water tank is carried on each underframe for catering purposes, with an electrically operated compressor suspended in a resiliently mounted case adjacent to it, for raising the water to

the service taps through pipes at pressure varying from 5 to 12 lb. per sq. in.

Water is also supplied by this means to the staff lavatory, and this method obviates the necessity of providing any water tanks in the roof, thereby considerably reducing the cost of maintenance.

The condensing units for the refrigerator, ice-cream conservator and bottle cooler, are also carried on the underframes, also the container for the Propane gas bottles for the cooking range, grill, and hot closet.

#### Gas Bottles Changed Through Trapdoor

The gas bottles are arranged in two banks, each of two, and provision has been made for changing the bottles through a trapdoor in the corridor floor, thereby eliminating the danger which would otherwise be incurred if the bottles had to be changed from track level over the live rail, as the track in London and at Hastings and St. Leonards is electrified.

An electrical equipment case is also carried on the underframe to house the various contactors and relays for the electrical appliances, which are fed from this case by cables carried in conduits along the underframe and up through the floor.

The gangways are fitted with sleeved rods operating in rubber-bonded housings with faceplates fitted with non-metallic liners, which arrangement has considerably reduced noise, and in addition particular attention has been given to the prevention of draughts at the double entrance doors at the gangway ends of the vehicle.

The bodies are mounted on bogies of the standard type for trailer vehicles in electric trains. They include vibro-insulator auxiliary side bearing springs and rubber-bonded spherical washer

swing rod suspension for the bolsters with horizontal hydraulic shock absorbers to soften and steady the transverse movement.

The buffet cars are staffed by the Pullman Car Co. Ltd.

They were designed and built at Eastleigh and Lancing Carriage Works under the supervision of Mr. W. J. A. Sykes, Chief Mechanical & Electrical Engineer of the Region.

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|---|---|
| Plastic finishing panels ..                             | Formica Limited                               |
| Self-closing gear for double doors ..                   | Bakelite Limited                              |
| Beclaitite windows ..                                   | G. D. Peters Limited                          |
| Runner gear for sliding doors and droplight fittings .. | Beckett, Laycock & Watkinson Limited          |
| Ventilation fans ..                                     | Vent-Axia Limited                             |
| Floor covering ..                                       | Korkoid Decorative Floors Limited             |
| Water supply tanks with self-raising equipment ..       | J. Stone & Co. (Deptford) Ltd.                |
| Refrigerator, ice cream cabinet and bottle cooler ..    | Frigidaire Division of General Motors Limited |
| Boiling water and coffee making machine ..              | W. M. Still & Sons Ltd.                       |
| Car kitchens for propane gas working ..                 | James Slater & Co. (Engineers) Ltd.           |
| Electro-pneumatic brakes system ..                      | Westinghouse Brake & Signal Co. Ltd.          |
| Insulation of body ..                                   | Gilmour Smith & Co. Ltd.                      |
| Electrical contractors ..                               | J. W. Roberts Limited                         |
|   | English Electric Co. Ltd.                     |

**INTRODUCTORY SIGNAL AND BRAKE ENGINEERING COURSES.**—Opportunities to make a career in railway signal and brake and electrical engineering were offered by the Westinghouse Brake & Signal Co. Ltd., which has had considerable success in courses which it arranged at Easter and in September of this year at Chippenham, Wilts. These resulted in a number of applications being received for apprenticeships with the company. The arrangements were made in conjunction with the Public Schools Appointments Bureau and by direct contact with local schools and careers advisory services. Similar courses are planned for Easter, 1959, and possibly also in the summer.



Buffet counter and corridor leading past kitchen to saloon



Dining saloon, showing ample gangway in 8-ft. coach width

# ELECTRIC RAILWAY TRACTION SECTION

## Silicon Traction Rectifiers

SINCE the first germanium traction rectifier in the world began to operate in a motor coach on the Lancaster-Morecambe-Heysham line of British Railways, London Midland Region, in December, 1955 (see our issue of January 6, 1956), considerable progress has been made in developing silicon rectifiers for similar applications. The British Thomson-Houston Co. Ltd., which built the original germanium unit, has announced that a silicon power rectifier has begun trials in the same vehicle as was used for the original germanium experiment. Already, however, the silicon venture cannot claim to be more than the first of its kind in Great Britain, for a silicon rectifier installation has been operating since May, 1957, in a shunting locomotive of the German Federal Railway. This equipment works on a low-frequency supply ( $16\frac{2}{3}$  c/s), which seems to give to British Railways and British industry the credit for first applying silicon to 50-cycle traction. Events in this field are moving so quickly, however, that all achievements in this direction are liable to challenge. At the Brussels International Exhibition this year the Ateliers de Constructions Electriques de Charleroi (A.C.E.C.) showed a silicon installation supplying d.c. traction motors. The rectifier, connected in three-phase bridge form, could deliver 300 A. continuously at 500 V., equivalent to approximately 200 h.p., in an ambient temperature of  $40^{\circ}$  C. This was purely for demonstration purposes. It reflects, however, the progress made by the company, which is to equip the last locomotive of a series now under construction for the Bas Congo-Katanga Railway with silicon rectifiers and has received orders for two locomotives of a lighter design which also will use silicon rectification.

In the German shunting locomotive installation the Siemens-Schuckert silicon rectifier is rated at 800 kW. (1,072 h.p.). It consists of 48 elements assembled at the base of a ventilation duct through which air is passed by a small blower. The arrangements in this locomotive differ from normal rectifier traction practice as it is designed for battery working in sidings which are not equipped with overhead lines. Consequently the motors have series/parallel control, with starting resistances. Each rectifier group is connected between one end of the transformer secondary and the mid-point of the winding. On each half-cycle, therefore, the whole traction current flows through one rectifier group and one half of the secondary. If the system were applied to a conventional a.c. locomotive with tap-changer control it is proposed to use a bridge-connected rectifier circuit and a smaller transformer.

Details of the B.T.H. silicon rectifier announced so far indicate that it is composed of 192 silicon cells, compared with 600 germanium cells in the preceding equipment, so achieving a considerable saving in size and weight. There is growing use of semi-conductors such as silicon and germanium in industry, and demand has risen to the point where germanium power cells are in mass production at the B.T.H. Rugby works. Silicon rectifier production is in progress at the same works on a new plant. The exceptionally careful controls of materials and assembly required in the manufacture of semi-conductor rectifiers are well-known, and the production of such units in quantity is an achievement in itself. An early start in this direction is likely to be of value to this country in quoting competitive prices abroad.

There is no doubt that the trend away from the a.c. traction motor, towards mercury rectifiers, with their auxiliary circuit requirements, caused some new thinking as to the advantages of cheapness and simplicity claimed for the 50-cycle system of railway electrification. Air-cooled semi-conductor devices, more particularly silicon, with its tolerance of high temperatures, may stimulate interest in 50-cycle traction in countries where electrification projects are being considered and managements are faced with the double choice between electricity and other

forms of motive power, and between the different electric systems themselves. In implementing plans of this kind, the policy of the large British electrical undertakings which have manufacturing associates in Commonwealth countries will enable such countries to satisfy their natural aspiration to home production while benefiting from experience.

## Train Heating with Electric Haulage

BY the time electric services between Manchester and Crewe are introduced in 1960, the North Kent section of the Southern Region Kent Coast electrification will have been completed, so that it should be possible for rolling stock on through North to South services via Willesden and the West London connections to leave Manchester hauled by a 25-kV. a.c. locomotive and arrive at Ramsgate, Dover, or on the Sussex coast behind a locomotive operating on the 750-V. d.c. system. Consideration therefore will have to be given to equipping coaches with alternative electric heating systems, for it is unlikely that the train-heating boilers provided in existing main-line electric locomotives will be perpetuated.

It has been announced already that in the new a.c. locomotives a heating supply at 1,000 V. will be taken from the transformer. On the Continent the variations of heating supply which may be encountered on an international journey are more numerous, comprising three voltages (1,000, 1,500 or 3,000) and d.c. or a.c. at  $16\frac{2}{3}$  or 50 c/s. It is therefore the practice to divide the heating elements into groups with series/parallel switching, and either to install one group in each compartment, or to use a single group in conjunction with a heat exchanger connected to hot water radiators. Element groups consist of six units of identical resistance which are connected all in series on 3,000 volts or in alternative parallel circuit arrangements on the lower voltages. While these circuit changes may be made manually, automatic systems which identify the applied voltage and set up the connections accordingly save much time and inconvenience.

In some conditions, however, heavy currents may have to be broken by the changeover switches, causing damage to the apparatus. A modified scheme has therefore been developed in which a main contactor is arranged to open the circuit if any abnormal changes in line voltage tend to cause operation of the changeover switches under load, and which further ensures that these switches are in no circumstances required to break current. A description of this modified system has been given in the September issue of *La Traction Electrique dans Les Chemins de fer* by Monsieur E. Meyer, Ingénieur Principal with the Belgian National Railways, and it is reported that 35 electrically-heated coaches of that administration have been or are being equipped with it. The vehicles also have steam heating, which is placed under thermostatic control in the same way as the electric heating by equipping the compartment thermostats with additional contacts through which the operating circuit of a steam valve may be energised. If the Manchester-Sheffield line remains on the 1,500-V. d.c. system, British Railways also may have to consider providing for three heating voltages besides steam heating.

An example of the complications involved is a through coach from Ostend to Milan. This begins its journey with the heating selection on 3,000 V., to conform with the traction supply on the Belgian National Railways. At Luxembourg the switch is changed to 1,500 V. for the section over the Luxembourg National and French National Railways to Basle, which is electrified at 25 kV., 50 c/s, and uses 1,500 V., 50 c/s for heating. From Basle to Chiasso the heating supply is taken at 1,000 V.,  $16\frac{2}{3}$  c/s from the Swiss Federal Railways overhead line via the locomotive transformer, and at Chiasso the switch has to be returned to the 3,000-V. position for the remainder of the journey over the Italian State Railways.



## Electrification between Rickmansworth and Amersham

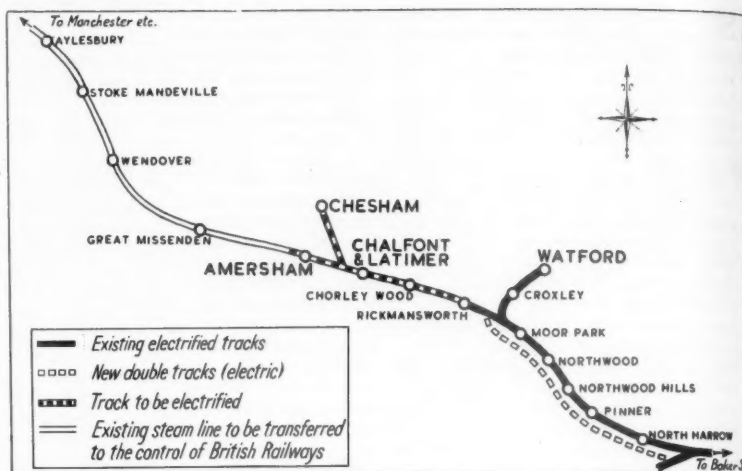
*Metropolitan Line trains to terminate at Amersham, with working of Marylebone-Aylesbury service by British Railways*

THE London Transport Executive has started on the scheme to electrify the 10-mile section of the Metropolitan Line from Rickmansworth to Amersham and Chesham. The work is planned to be completed by the summer of 1960, when electric trains will run through from London to Amersham, 28 miles away, for the first time.

At present, Metropolitan trains are hauled by electric locomotives as far as Rickmansworth, where steam engines take over for the rest of the journey. When the electrification is completed, Amersham will become the new terminus of the Metropolitan Line instead of Aylesbury as at present; the service to Aylesbury will then be the responsibility of British Railways from Marylebone.

### Long Welded Rails

In the first stage, now being tackled, 8,000 concrete posts, to carry high-tension current and signal cables, are being erected alongside the line. This work will be finished by the autumn. The next stage will include the fixing of cables to the posts and laying over 30 miles of conductor rails on the track itself. These rails, originally 60 ft. long, will be welded into continuous half-mile lengths. At the permanent way depot at Willesden Green, the rails are first being welded into 300-ft. sections by a special mobile machine and then taken out to the site on a



*Metropolitan Line north of Harrow, showing section to be quadrupled*

five-wagon train where they will be welded *in situ* into half-mile lengths after being secured to the sleepers.

At the same time work is starting on transforming Amersham station into the new outer terminus of the Metropolitan Line. Platforms are to be lengthened to 525 ft. to take longer trains and the existing down platform widened and made into an island platform for British Railways trains to Aylesbury on one side and terminating

Metropolitan trains on the other.

The track layout in the area is to be completely rearranged and two 450-ft. sidings are to be laid down north of the station for reversing electric trains. To take the extra tracks, two road bridges at Amersham are being rebuilt and widened. Platforms are also to be lengthened to 525 ft. at Chalfont and Chorley Wood and to a lesser extent at Chesham, the terminus of the branch

(Continued on page 515)



*Concrete posts to carry cable runs being erected between Rickmansworth and Chorley Wood*



*Square brackets nearest track are for signal cables, dished brackets for traction supply*



## Swiss Rack-and-Adhesion Trains

*Twin-coach sets of 12 h.p. per ton of laden weight include control trailer weighing 555 lb. a seat*

AFTER 50 years of operation the electrified Martigny-Châteldard Railway, in Switzerland, has acquired a relatively considerable amount of new motive power and rolling stock for its 12-mile system. This is the form of three new rack-and-adhesion motor coaches and four control trailers, all built by Schindler Wagons S.A., of Pratteln, and incorporating Sécheron electrical equipment.

### Through Working Over S.N.C.F.

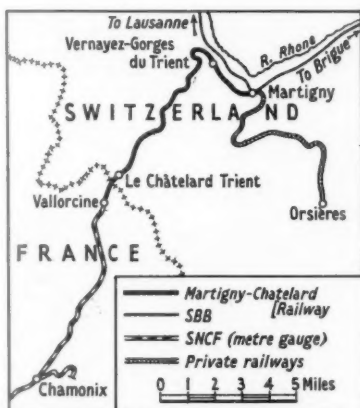
This railway makes end-on connection at Vallorcine with the Chamonix-Vallorcine metre-gauge electrified section of the French National Railways. A remarkable operating point is that since the recent re-equipment of this French line the Martigny-Châteldard 60-seat 48½-ft. 15-ton control trailers are often hauled in the season from Vallorcine to Chamonix and return, thus giving a through coach to Chamonix from the Rhône valley at Martigny. Direct current at 800 V. is the power medium on the Swiss line; but between Martigny and Vernayaz it is collected by a pantograph from an overhead wire, whereas from Vernayaz onwards to the frontier at Vallorcine it is collected from a third rail, in the new motor coaches by four shoes.

### Layout of Motor Coaches

Each of the new motor coaches is of double-bogie type with all axles driven, and of classification ABFeh4/4, that is with first class (8 seats) and second class (44 seats) accommodation and luggage room. There is a full-width driving compartment at each end, but through communication is provided by end doors and hinged fall plates. Overall body length is 56 ft., bogie pivot pitch 37 ft. 8 in., bogie wheelbase 9 ft. 9 in., and wheel dia. 34 in. Empty weight is 37½ tons. Starting tractive effort at the wheel rims is 39,600 lb., and one-hr. rated tractive effort 24,200 lb. at 11 m.p.h. Up the maximum rack gradient of 1 in 5 the top continuous speed is 10½ m.p.h., but on the descent speed is limited to 8½ m.p.h. Along the level top permissible speed is 31 m.p.h.

### Traction Motors

The unusual feature of the motor coach is the type and arrangement of the traction motors. These are carried on the bogies but are wholly spring-borne, and are located transversely close against the centre transom. They are force-ventilated, and have an individual one-hour rating of 190 h.p. and a continuous rating of 148 h.p. Each drives through double-reduction spur gears on to the adjacent axle, and in this line is embodied the Sécheron blade type of flexible coupling. The rack gear wheel



*Martigny-Châteldard Railway, showing connection with Chamonix-Vallorcine section of S.N.C.F.*

runs loose on the axle, but is flanged to the brake drum of the hand brake. Between the torsion shaft of the Sécheron blade coupling and the gear is a slipping clutch to limit the torque transmitted.

Construction of the mechanical portion is on normal lightweight integral methods, in steel; and the bogies are of the usual Swiss type, with SKF roller-bearing axleboxes having cylindrical guides surrounded by helical springs and with hydraulic dampers included. The body weight is supported on the bogies through spring-loaded side bearers.

Braking comprises an Oerlikon straight air brake actuating shoes on all wheels, from double-acting horizontal cylinders on the bogie headstocks; an automatic air brake for simultaneous trailer and motor coach braking; an electromagnetic rail brake; an electric resistance brake; and a hand brake. A magnetic brake-pressure regulator ensures that the standard brake pressure is always available on the rack sections. Dead-man operation is included.

Control current is 72 V. d.c., fed from a lead battery of 100 A.h. capacity. The driving controller has 21 traction notches and 26 braking notches. Heating is electric, by the 800-V. line current. Lighting current normally is taken off the line supply.

### Electrification between Rickmansworth and Amersham

*(Concluded from page 514)*

from Chalfont, which is four miles long and single line.

Sub-stations are to be built near Chalfont and at Chorley Wood to provide the 600-V. d.c. traction supply. The line to Amersham is to be equipped with L.T.E. latest colour-light power signalling and a new signal cabin with push-button controls will be built at Amersham.

This phase of the scheme is being carried out by the Chief Civil Engineer's Department of the Executive.



*Schindler 760-b.h.p. motor coach and control trailer in the Trient gorge, on the ascent from the Rhône valley at Martigny*

## Stainless Steel Electric Trains in New South Wales

*First use of 10-car sets on residential service from and to Blue Mountains*



*Nine-car set of "Fish" before departure from Sydney Central Station for Mount Victoria; a tenth car has since been added*

**T**HE New South Wales Government Railways placed in service on September 15 its first stainless-steel multiple-unit inter-urban train for its 1,500-V. d.c. electric services. This was a nine-car set providing the "Fish" services between Sydney and Mount Victoria in the Blue Mountains. A tenth coach has been added. As additional cars of the total order for 80 are delivered, more of these sets will replace existing trains hauled by electric locomotives on the Western line between Sydney and Lithgow. When electrification is completed between Sydney and Gosford in December, 1959, this type of train will also be operated on this section of the northern line. The "Fish," the oldest named train in Australia, conveys business traffic from Mount Victoria in the morning and back in the evening. Reference to the origin of the name is made in the Scrap Heap this week.

Each of the 80 cars on order (40 motor and 40 trailer) is 65 ft. over body ends. Seating is provided for 52 passengers in each motor coach and for 64 in each trailer.

The vehicles are of stainless-steel construction including external sheathing, the interior lining of the body-sides, ends and ceilings being of light gauge aluminium.

### Seating

Hinged side doors each end of each car provide access. In the first class cars a transverse partition divides the saloon to provide separate accommodation for 16 non-smoking passengers. The seats are the two-passenger turn-over type. They are upholstered on

spring frames and finished with fabric, blue-green for first and middle green for second class.

The flooring is a trowelled rubber composition laid on the key flooring, over which is secured linoleum in the saloon, and plastic tiles in the vestibules.

Lighting is of the gallery type suspended from the ceiling; each lamp is 40 W., with a voltage of 120.

Longitudinal parcel racks run the full length of both sides of the saloon. Windows are of the lift-up type. Electric fans are mounted on the end bulk-

heads in the saloon, and heaters are provided on the floor below the seats.

Externally the polished stainless steel is retained as the finish. The interiors are finished in three shades of green enamel.

### Interlock Couplers

Interlock type automatic couplers are fitted to reduce the possibility of telescoping in the event of collision.

The motor equipment is mounted on the bogies of the motor coaches. Vehicles are mounted on bogies incorporating outside-suspended coiled bolster springs, shock absorbers, traction bars, and roller bearings.

The contractors for stock delivered and under construction are:—

|                         |  |
|-------------------------|--|
| Bodies .. .. .          | Commonwealth Engineering Co. Ltd.          |
| Electrical equipment .. | Australian Electrical Industries Pty. Ltd. |
| Bogies .. .. .          | A. E. Goodwin Limited                      |

**BRITISH STANDARD FOR SULPHURIC ACID FOR LEAD-ACID BATTERIES.**—The new British Standard publication for sulphuric acid for lead-acid batteries, B.S.3031:1958, specifies limits for the presence of: residue on ignition, chloride, sulphur dioxide, combined ammonia, nitrogen (other than combined ammonia), iron, copper, manganese, and arsenic. They are followed by nine appendices, each containing a detailed method for determination of these constituents. A final appendix provides a formula for calculating the volume of sulphuric acid to be taken for test. There are no requirements for the strength of the acid, since it is normal trading practice for the purchaser to specify this when ordering. Amendments to B.S.454, train lighting accumulators, and B.S.2550, traction batteries for electric road vehicles, will take account of the requirements of this publication. Copies of this standard, 4s. 6d., may be obtained from the British Standards Institution, 2, Park Street, London, W.1.



*Second class trailer, showing reversible seats for 64 passengers, and double luggage racks*

## RAILWAY NEWS SECTION

## PERSONAL

Mr. H. G. Bowles, Assistant General Manager (Administration), Western Region, British Railways, has been re-designated Assistant General Manager, and Mr. A. W. J. Dymond, Stores Superintendent of that Region, Supplies & Contracts Manager.

Mr. A. G. Norman, who, as recorded in our June 6 issue, has been appointed

Traffic Manager & Commercial Superintendent, Gold Coast Railway & Port Authority. He acted as Traffic Manager for the greater part of two years, during the absence of the substantive Traffic Manager, on special duties in connection with the construction of Tema Harbours. In 1955, Mr. Norman retired from the Colonial Railway Service and was later appointed Assistant Secretary to the West of India Portuguese Guaranteed Railway

Mr. T. A. Joseph, General Manager, Southern Railway of India, who, as recently recorded, has retired, was born in 1903. He was educated in St. Joseph's College, Trichinopoly, and Presidency College, Madras. After becoming Master of Arts in 1924, he entered the service of the North-Western Railway. He was posted to Lahore as Probationary Assistant Traffic Superintendent in 1927. In 1933, he transferred to the Great Indian Penin-



Mr. A. G. Norman  
Appointed General Manager,  
Trinidad Government Railways



Mr. T. A. Joseph  
General Manager, Southern Railway,  
India, 1953-58

General Manager of the Trinidad Government Railways, began his railway career in the Marine Superintendent's Department at Harwich (Parkeston Quay), London & North Eastern Railway, in 1927. Mr. Norman served in various branches of that department, and, during this period took the normal domestic railway courses and also the courses in railway operating economics and law at the London School of Economics. In 1933, at the age of 23, he became an Associate Member of the Institute of Transport. In 1938, he joined the General Manager's Office of the Kenya & Uganda Railways & Harbours. In 1942, he was appointed Administrative Assistant, Palestine Railways & Ports. In 1948, on the termination of the Palestine Mandate, Mr. Norman was transferred to the Gold Coast Railway & Port Authority, as Administrative Assistant, and, the same year, was appointed Assistant to the General Manager. He was subsequently appointed Deputy

Co. Ltd. He was serving in this capacity when he accepted his present appointment.

Mr. J. A. Clarke, General Manager, Ulster Transport Authority, was elected Chairman of the Managers' Conference for 1959 at a meeting held at the Irish Railway Clearing House, Dublin, on October 14.

Sir Walter Harrigan has been appointed Chairman of the commission which is to inquire into the rating structure of the Rhodesia Railways. Sir Walter Harrigan, who is a former Acting Chief Justice of Northern Rhodesia, has headed several commissions of inquiry in the Federation. The following have been appointed Members of the commission:—Mr. D. M. Robbertze, Deputy General Manager, South African Railways; Mr. J. R. Pike, former Chief Commercial Officer, British Railways Central Staff, and Mr. W. Margolis, the Rhodesian industrialist and economist.

sular Railway as Assistant Traffic Manager. He worked as Assistant Traffic Manager, District Traffic Manager, Divisional Superintendent and Deputy Chief Traffic Manager on that railway until he was transferred to the South Indian Railway, in 1948, as Chief Traffic Manager. In 1951, Mr. Joseph became Senior Deputy General Manager of the Southern Railway, which was formed by the integration of the Madras & Southern Mahratta, South Indian and Mysore State Railways. He became General Manager in May 1953.

Mr. R. A. Emerson has been appointed Vice-President, Canadian Pacific Railway. Mr. Emerson has been Vice-President, Operation & Maintenance, since 1955. He succeeds the late Mr. D. S. Thomson.

Mr. George H. Baillie, Vice-President, Eastern Region, Canadian Pacific Railway since 1950, has been appointed Vice-President, Operations.



Mr. S. M. Gossage, Assistant Vice-President of Personnel, Montreal, Canadian Pacific Railway, has been appointed Vice-President, Eastern Region, Canadian Pacific Railway.

Mr. Edwin Black, B.Sc.(Eng.) (Lond.), M.Inst.C.E., A.C.G.I., Chief Engineer, Way & Works, Ceylon Government Railway, who, as recorded in our September 19 issue, has retired, was born in 1906. Mr. Black was educated at St. Patrick's College, Jaffna, Ceylon, and the City & Guilds Imperial College, London, where

as Generating Superintendent (Lots Road); Mr. G. F. Withers Generating Superintendent (Neasden), as Generating Station Superintendent (Greenwich); Mr. E. Hibbett, Assistant Generating Superintendent (Lots Road), as Generating Superintendent (Neasden).

Mr. D. R. Barnacle, Maintenance Assistant, Divisional Motive Power Superintendent's Office, Crewe, London Midland Region, British Railways, has been appointed Assistant Line Traffic Officer (Motive Power) Crewe.

Mr. H. B. Taylor, Assistant Operating Superintendent, Southern Region, British Railways, is retiring on October 31, after 46 years' railway service.

Mr. N. A. Vaitialingam, B.Sc.(Lond.), A.C.G.I., A.M.I.Struct.E., A.M.I.C.E., Deputy Chief Engineer, Way & Works, Ceylon Government Railway, who, as recorded in our September 19 issue, has been appointed Chief Engineer, Way & Works, was born in 1911. Mr. Vaitialingam received his education at Hindu College, Jaffna, the



*Mr. Edwin Black*

Chief Engineer, Way & Works, Ceylon Government Railway, 1956-58



*Mr. N. A. Vaitialingam*

Appointed Chief Engineer, Way & Works, Ceylon Government Railway

he completed his engineering studies. He joined the London & North Eastern Railway, in 1930, for practical training in railway engineering. On his return to Ceylon, he entered the service of the Department of Railways in May, 1933, as an Assistant Engineer. He was appointed District Engineer in 1939, Assistant Chief Engineer in 1946 and Deputy Chief Engineer in 1949. From December, 1953, to October, 1955, Mr. Black acted as Assistant Secretary, Ministry of Transport & Works. He was appointed Chief Engineer in 1956. He has acted as General Manager on three occasions. Mr. Black moved to Bangkok and has taken up an appointment as Chief of the Railway Section (Transport Division), United Nations Economic Commission for Asia and the Far East.

London Transport Executive announces the following appointments in the Chief Electrical Engineer's Department: Mr. W. Ward, Generating Superintendent (Green-

Southern Region, British Railways, announces the following appointments in the Office of Assistant General Manager (Traffic): Mr. N. L. Collins, District Traffic Superintendent, Exeter, as Trains Assistant; Mr. F. P. B. Taylor, Assistant (Services & Finance), General Manager's Office, as General Assistant; Mr. J. D. Atkins, Assistant, to Chief Commercial Manager (Traffic Development), as Passenger Assistant. Other appointments announced by the Southern Region are as follows:—Mr. H. C. Walter to be Assistant Development Officer; Mr. A. Edwards to be Assistant to Operating Officer, Waterloo; Mr. J. M. Leighton-Bailey to be Modernisation Assistant; Mr. A. W. Knight to be New Works Engineer (Power Supply), London Bridge.

Dipl.-Ing. Alfons Brill recently has retired as Head of the Engineering Department of the German Federal Railway. He has been succeeded by Dr.-Ing. Günther Wiens.

University College, Colombo, and the City & Guilds Imperial College, London. Thereafter he received practical training under Messrs. Coode Wilson, Vaughan-Lee & Gwyther, Consulting Engineers, London. He returned to Ceylon in October, 1942, and joined the Ceylon Railways as a Junior Engineer. In the following year he received further training with the North Western Railway of India. He was appointed Assistant District Engineer in 1947, District Engineer in 1950, Assistant Chief Engineer in 1956, and Deputy Chief Engineer in 1957.

We regret to record the death, on October 7 of Mr. E. W. Steele, former Director & General Manager of Works, Metropolitan-Vickers Electrical Co. Ltd. Mr. Steele was also a former Chairman of Metropolitan-Vickers-Beyer, Peacock Limited.

Mr. Edwin W. Ganderton has retired from the board of Powell Duffryn Limited.



**Mr. C. L. Jolliffe**

Appointed Regional Pensions Officer,  
L.M. Region

Mr. C. L. Jolliffe, Chief Clerk to the Regional Pensions Officer, London Midland Region, British Railways, who, as recorded in our October 10 issue, has been appointed Regional Pensions Officer, was educated at the Royal Masonic School, Bushey. He joined the former L. & N.W. Railway in 1917 in the Expenditure Office, and on the transfer of that office to the Accountant in 1922, remained in the Funds Department. In 1950 he was appointed Chief Clerk to Mr. A. T. Gosden, whom he now succeeds as Regional Pensions Officer.

Dr. R. Beeching, Technical Director of Imperial Chemical Industries Limited; Mr. J. M. Willey, a Director of Murex Welding Processes Limited, and Mr. T. M. Herbert, Director of Research, British Railways, have been elected Members of the Council of the British Welding Research Association. Mr. J. Strong, this year's President of the Institute of Welding, will represent the Institute on the council of the Association during the year 1958-1959.

Sir Stanley J. Harley has been elected Chairman of Rockwell Engineers Limited, and Mr. Wilfred J. Foster has also joined the Board of the Coventry Gauge & Tool Co. Ltd., as a Managing Director, and Mr. J. Middleton and Mr. L. Baker have also joined this Board, the latter as Deputy Managing Directors. An offer by the Coventry Gauge & Tool Co. Ltd., to acquire the capital of Rockwell Engineers Limited, became unconditional early in October.

Mr. J. A. Ross, Docks Mechanical & Electrical Engineer, Middlesbrough & Hartlepool Docks, British Transport Docks, has retired. As a result of reorganisation, Mr. P. K. Brown, Docks Engineer, Middlesbrough & Hartlepool Docks, has assumed responsibility for the whole of the civil, mechanical and electrical engineering organisation at these ports.

Mr. John Taylor, Deputy Works Manager, Leigh Works, British Insulated Cables Limited, has retired after almost 51 years' service with the company.

London Midland Region, British Railways, announces the following appointments:—

Mr. F. Walton as District Operating Superintendent Liverpool (Central).

Mr. F. Craven as District Road Motor Engineer, Manchester.

Mr. E. Danby as District Estate Surveyor, West Midlands District, Crewe.

Western Region, British Railways, announces the following appointments, in connection with their policy of decentralisation of management:—

Mr. L. Edwards as Divisional Traffic Manager, Bristol.

Mr. G. A. V. Phillips as Divisional Traffic Manager, London.

Mr. R. C. Hilton as Divisional Traffic Manager, Birmingham.

Mr. J. H. F. Page as District Traffic Superintendent, Cardiff.

Mr. J. F. M. Taylor as District Traffic Superintendent, Swansea.

Mr. W. J. Morris as District Traffic Superintendent, Newport.

Mr. L. A. Morgan as Operating Officer, Divisional Traffic Manager's Office, Cardiff.

Mr. H. S. Jenkins as Commercial Officer, Divisional Traffic Manager's Office, Cardiff.

Mr. C. H. D. Read as Running & Maintenance Officer, Divisional Traffic Manager's Office, Cardiff.

Mr. L. C. Barron as Staff Assistant, Divisional Traffic Manager's Office, Cardiff.

Under the revised organisation, the Divisional Traffic Managers will co-ordinate and control all commercial and operating functions in their respective areas, with responsibility to the Assistant General Manager (Traffic), Mr. A. C. B. Pickford.

The Argentine State Railway system (E.F.E.A.) announces that Eng. F. R. Newton González, Eng. J. F. Alexander, Eng. E. Lardizabal, Eng. A. T. Pasquini, Dr. J. Donizza, and Sr. N. L. Serrot, have been appointed to the board of the system. Two of three directors yet to be elected will be nominees of the railwaymen's unions and of the administration of E.F.E.A. Eng. A. M. Cadot becomes Administrator-General, and the following Superintendents have been appointed:—Eng. P. L. Bernardini, Traction & Workshops; Eng. A. A. Vilas, Way & Works; Eng. C. A. Luppi, Staff & Labour; Sr. C. Plaghos, Traffic; Sr. H. C. Cora, Stores & Purchases; and Sr. O. Narmando, Finance & Accountancy. Line Administrators will be:—Eng. F. Mora, General Roca Railway; Eng. M. V. Sanguinetti, D.F. Sarmiento Railway; Eng. H. H. Vilaseca, General Mitre Railway; Eng. L. A. Hasperué, General Belgrano Railway; and Eng. N. O. Ferramola, General Urquiza Railway.

The Road Vehicle, Rail & Property Offices of the British Transport Commission have been amalgamated under Mr. R. W. Jolley as Media Officer. Mr. W. J. Oliver becomes Sales Officer, and Mr. F. J. Frost, Promotion & Research Officer.

Mr. J. W. C. Milligan, Managing Director of Southern Areas Electric Corporation Limited is making a five-week business tour of North America.

Mr. T. V. Woods, who recently joined the executive staff of the British Electric Traction Co. Ltd., is being appointed to the boards of a number of associated companies. Mr. Woods was lately General Manager, in Bolivia, of the Antofagasta (Chili) & Bolivia Railway Co. Ltd.



**Mr. H. Greig**

Assistant to Chief Commercial Manager,  
Scottish Region, 1955-58

Mr. Herbert Greig, M.B.E., Assistant to Chief Commercial Manager (Modernisation & Productivity), Scottish Region, who, as recorded in our September 5 issue, has retired, began his railway career in 1908 in the Goods Department, Airdrie, of the former Caledonian Railway. After service at stations and for six years as a relief clerk, Mr. Greig became Clerk-in-Charge, Canvassing & Development Section of the Goods Manager's Office, Glasgow, London Midland & Scottish Railway, in 1923. Three years later he was transferred to the Cartage & Station Working Section, Goods Manager's Office and in 1929 became Goods Agent, Perth. In 1930 he was loaned to the Chief Goods Manager, London, for investigation, including method study and clerical output. In 1932 he returned to Glasgow to take charge of the section of the Commercial Manager's office dealing with Canvassing, Development, Cartage Rates & Services and Road Vehicle Licensing (Goods). Mr. Greig was appointed Agent for Accounts, Glasgow, in 1935. In 1948 he was attached to the Commercial Superintendent's Office, Scottish Region, British Railways, for special duties and in 1951 was appointed General Assistant (Freight) to the Commercial Superintendent. In 1955, he became Assistant in Modernisation & Productivity, the position he now vacates. Mr. Greig has always taken an active interest in increased productivity and new methods of mechanisation in clerical and handling work. In the New Year's Honours List of 1955 he received the award of the M.B.E. for his services in this connection.

English Steel Corporation announces the following appointments to the boards of its operating companies:—English Steel Forge & Engineering Corporation, Limited, Mr. W. H. Stratford, Superintendent Steel Melting, and Mr. R. W. Brocklehurst, Superintendent Heavy Forge Production; English Steel Rolling Mills Corporation, Limited, Mr. P. Turrell, who will also be Assistant Managing Director; English Steel Castings Corporation, Limited, Mr. L. R. Evans, Superintendent Foundries; English Steel Spring Corporation, Limited, Mr. R. Fielding, Superintendent Spring Production.

## NEW EQUIPMENT AND PROCESSES

### The Tote System

ON October 14 and 15, at Stratford-on-Avon, as briefly recorded in last week's issue, a demonstration was sponsored by the Bulk Materials-Handling Division of Pressoturn Limited, of its method of bulk-handling of powdered granular and liquid traffic by rail. The meeting was attended by officers of British Railways Central Staff and of each region.

The system, which incorporates the use of specially-constructed bins, allows bulk-material handling from source of supply to point of actual usage, without intermediate transfer. The equipment comprises:—Tote bins, tilts to suit varying applications, and equipment for controlling, feeding, and emptying the bins.

The standard Tote bins are of 42, 74, and 95 cu. ft. capacity. Base dimensions are such that two, side by side, fit across a standard British Railways' pipe wagon, which can carry 10 bins. They are made from high-strength aluminium alloys to combine low tare weight with maximum strength. There is a circular filler-aperture, with a removable self-sealing lid at the top of the bin, and a key-locked discharge door, hinged throughout its length at the base of one side. The bin has lifting lugs for cranes, and is slightly raised by short feet at the base for handling by fork-lift trucks.

At the discharge point, the bin is positioned on the tilt by fork-lift truck or crane. It is then inclined to 45 deg., a key is inserted through the tilt-unit hopper and the discharge door opened, allowing the material to flow. Specially-designed gaskets ensure that no sifting or blow-back occurs. Gravity tilt-units are used where the material is discharged to a lower level and those of screw type when the production line is at the same level as the tilt. The screw units can be coupled to any form of conveyor or elevator if required. Vibrator units can be fitted to both types of tilt to ensure complete discharge of fine powders.

The manufacturer claims that the



following advantages are offered to the railways by this system: good pay-load; improved discharge time; use of standard rolling-stock; ease of handling by fork-lift truck or crane; use of unsheeted open wagons for bulk traffic; handling of obnoxious materials without risk to staff or contamination of wagons, and elimination of sacks or cartons.

The advantages offered to the user are stated to include: bulk-purchase discounts; elimination of bag or sack handling; arrival of raw-material in good condition; no wastage through spillage; no contamination or infestation; minimum handling when placing material on production lines, and special rates for raw materials.

A pilot scheme has been operating on the Western Region of British Railways

for some nine months, under which carbon black has been carried from Avonmouth to Fort Dunlop, Birmingham; 50 A95 Tote bins have been in use. These recently have been increased to 200. The London Midland Region is carrying high-grade pitch from Manchester to Newcastle, using 20 A74 bins, and is in process of installing some 32 A95 bins for china-clay traffic between Cornwall and Manchester. On December 1, a pilot scheme for the movement of specialised pigments comes into operation between Grimsby and Slough. The bins are owned by British Railways, and hired to customers.

Tote bins have been used in the United States of America for more than four years.

A demonstration rail-van will shortly





tour the country, so that the system may be demonstrated by British Railways to its customers.

The illustrations accompanying this description show the bins in a standard British Railways pipe wagon; method of stowage, and a tilt mounted in a demonstration van.

### Passenger-Controlled Window Ventilator with Fume Extraction

**R**EGULATION by the passenger of the intake of fresh air when the window is open, and automatic extraction of fumes when it is shut are afforded by the Rotavent rotary ventilator.

The control element is a perspex cylinder, slotted through on each side, and mounted in two cup-shaped end covers, in which the cylinder is free to revolve. Felt strips provide the sliding joint seals and the end cups are flanged for attachment to the window frame.

On the outside the top half of the cylinder is enclosed in a metal cover, flanged on the lower edge to form a rain gutter. The air inlet ports are positioned to admit air through the lower portion, and to discharge upwards into the roof.

The degree of opening is adjustable between the open and closed positions. To trap soot particles, a fine gauze screen can be fitted on the inside ports. This is self-cleaning by the air-flow through the cylinder when the ventilator is closed.

To extract fumes, a small grill is attached to the cylinder, on the compartment side. On the outside, openings are provided in the end covers, which allow a continual flow of air to pass through the cylinder. The extractor effect of this air-flow is increased in the region of the grill by the fitting of a Venturi tube. For large windows, twin units, with independent control on each, can be supplied.

Further details can be obtained from the manufacturer, Auster Limited, Barford Strett, Birmingham, 5.

### Side-Operating Fork-Lift Carrier for Long Loads

**D**ESIGNED for the handling and depot or works transportation of loads such as timber or bar and tube material, a British-built model of the Irion Side Operating Fork Lift Carrier is now available. This can carry 60-ft. loads and operate in gangways 7 ft. 6 in. wide.

The Kestrel Irion side-operating fork-lift carrier can move 60-ft. loads and operate in gangways 7 ft. 6 in. wide. It has alternative ratings of 6,600 lb. at 10 ft. lift, 6,600 lb. at 13 ft., or 8,800 lb. at 10 ft. The power unit is the four-cylinder Ford diesel engine rated at 55 b.h.p., driving through a four-speed synchro-mesh gearbox. With an Eaton two-speed axle this provides 6 forward speeds and two speeds in reverse. The forward speeds range from 3.5 to 19 m.p.h. and the reverse speeds 3 to 4.5 m.p.h. Steering is power assisted and the clutch hydraulically operated. An engine-driven Dowty pump operates the hydraulic system for extending the forks. After loading, the mast is retracted within the width of the vehicle, and the load lowered on to the platform body.

To ensure lateral stability, two stabilising jacks are mounted at the edge of the chassis, under the transverse roller tracks. These are self-adjusting for height on uneven ground.

The three hydraulic levers for the lift,

traverse, and stabilising jacks, and for positioning on the panel, are each interlocked to ensure independent operation. A warning light shows on the mast if the clutch pedal is operated when the stabilising jacks are depressed.

Details may be obtained from the manufacturer, Materials Handling Equipment (Great Britain) Limited, 40a Dover Street, London, W.1.

### Hydraulic Platform

**T**HE Hilift platform is designed for maintenance work to overhead cables and telephone lines and lights, and for repairs to roofs and gutters. It can be quickly fitted with four pins to the standard Whitlock power shovel, elevation being controlled by hydraulic rams, incorporating built-in safety restrictors. The whole unit is exceptionally mobile and rigid at all platform heights.

It is also particularly suitable for erecting scaffolding and loading materials on to high scaffolds. The service platform has a lift capacity of 600 lb. to a maximum height of 20 ft. or two men and their tools. Maximum outreach in front of tractor is 16 ft. at 5 ft. 6 in. and 5 ft. at 20 ft. height.

Further details may be obtained from the manufacturer, Whitlock Bros. Ltd., Great Yeldham, Essex.

### Emergency Wound Dressing

**A** FIRST-AID dressing with antiseptic cleansing fluid included in the pack can be used by men working on the permanent way or elsewhere where water is not always readily available.

A pocket-size cardboard carton contains the dressing which is packed in a sterile paper cover. The antiseptic is in a plastic screw-top bottle. A paper flap is lightly stitched to a short length of bandage; a pocket in the bandage contains a pad of cotton wool for swabbing. The main dressing, attached to the bandage, is a 3-in. square cotton wool pad covered by gauze. This is enough to cover most wounds, and is similar to the standard No. 13 Mines Dressing. The plastic bottle holds approximately half a fluid ounce of cleansing fluid



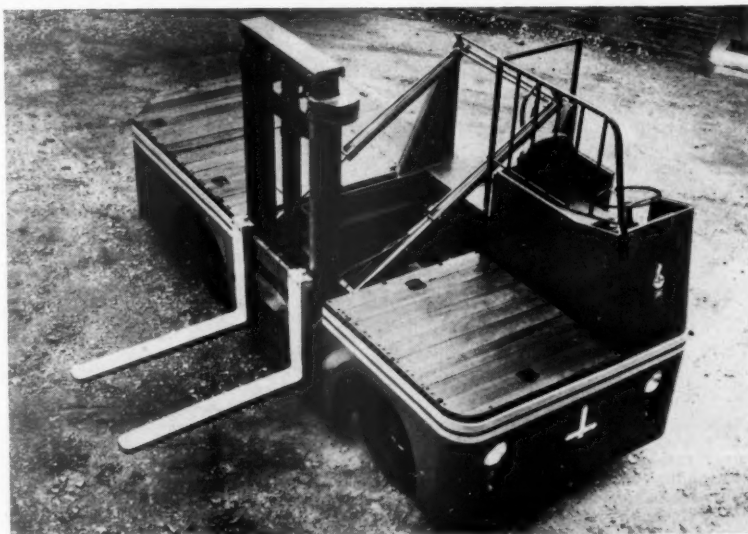
which contains 1 per cent Cetrimide and 0.1 per cent chlorhexidine diacetate.

Full details may be obtained from the manufacturer, Robert Whitelaw (Newcastle) Limited, 44, Great North Road, Newcastle-upon-Tyne, 2.

### Polythene Ferrules for Chaired Track

**A** POLYTHENE ferrule can be used with bull-head track as a spacer between the cast-iron chair and the mild-steel chair-screw as a protection against fracture. Trials on British Railways are stated to have given satisfactory results. Further trials are reported to have shown that the working life of the polythene component is greater than that of a timber ferrule. The makers state that tests included extended use in a busy tunnel in the London Midland Region, and that subsequent inspection by the Track Design Sub-Committee of the Civil Engineering Committee of British Railways Central Staff proved them to be scarcely distinguishable from unused ferrules of the same pattern.

Details may be obtained from the manufacturer, William Jones Limited, Adam House, 1, Fitzroy Square, London, S.W.1.



## European Conference of Ministers of Transport

*Transport in the Free Trade Area: co-operation with professional and trade union organisations*



*Mr. Harold Watkinson with European Ministers of Transport, Mr. Airey Neave, and Mr. K. W. C. Grand, before departure from Paddington for Harwell*

The ninth session of the council of the European Conference of Ministers of Transport was opened by Mr. Harold Macmillan, the Prime Minister, at Lancaster House on October 15. All 17 member countries of the conference were represented, 11 by their Ministers of Transport. The U.S.A., an associate member of the conference, was represented by an observer.

Mr. Macmillan told the ministers it was fitting that they should be intending to discuss, among other things, their role in a European free trade area. "Transport plays an important part in our daily lives," he said. "Indeed trade and transport must go together and grow together. It is not an exaggeration to say that closer economic co-operation within Europe could not be achieved without co-operation in the field of transport."

The Minister of Transport & Civil Aviation, Mr. Harold Watkinson, had told him about the co-ordination of national construction projects for road, rail, and inland waterways with the aim of developing a common system of European arteries. Britain, he stated, had played its full part in their deliberations in the past. No doubt there was a striking similarity between the problems which faced ministers of transport in every country. Nothing but good could come from looking at these problems together.

Mr. Harold Watkinson was elected Chairman for the coming year. Dr. J. Algrè, Netherlands Minister of Transport, and Dipl. Ing. Karl Waldbrunner, the Austrian Minister of Transport & Electricity, were elected Vice-Chairmen.

### Transport in the Free Trade Area

The session was devoted chiefly to discussions of matters concerning the organisation of transport in Europe and in particular the transport aspects of the free trade area and of the European economic community. The Council also discussed its arrangements for co-operating with the international professional and trades union organisations concerned with transport and decided to include road safety among the subjects it should study.

On October 16 a visit was made to the Atomic Energy Research Establishment at Harwell. The accompanying illustration of a group of ministers before departure from Paddington, shows, left to right:—

Mr. Dapcevic, Minister of Transport, Yugoslavia; Mr. A. Angelini, Minister of Transport, Italy; Mr. Harold Watkinson, Minister of Transport & Civil Aviation; Mr. de Vries, Deputy to the Netherlands Minister of Transport; Mr. I. K. Waldbrunner, Minister of Transport & Electricity, Austria; Dr. Hans-Christoph Seeböhm, Federal Minister of Transport, Germany; Mr. K. Lindberg, Minister of Public Works, Denmark; Mr. G. Lepori, Minister of Posts & Railways, Switzerland; Mr. K. Varmann, Minister of Transport, Norway; Mr. Airey Neave, Joint Parliamentary Secretary, Minister of Transport & Civil Aviation; Mr. Segers, Minister of Communications, Belgium; and Mr. K. W. C. Grand, General Manager, Western Region, British Railways.

A dinner was given by the British Transport Commission to the Ministers at the Great Eastern Hotel, Liverpool Street, E.C., on October 17. Sir Brian Robertson, Chairman of the Commission, addressed the gathering. His remarks are the subject of an editorial article on another page.

### Diesel Development in Hungary

The first passenger stock to be fitted with British-made air-conditioning equipment have been built at the Wilhelm Pieck Carriage Works at Győr, Western Hungary, and have satisfactorily completed their tests.

The equipment is being supplied by J. Stone & Co. Ltd., under a contract estimated to be worth about £1 million. The agreement provides for the supply of about 100 complete sets of equipment to Hungary, after which it is intended to develop joint manufacture of further equipment under licence.

At Győr and three other rolling stock

plants in Hungary diesel traction is being developed with a 450 million forint (£13 million) programme over the next three years. The programme provides for 75 diesel shunting engines of 130 h.p. to be built at the Győr works, which also is to begin the manufacture of diesel multiple-unit trains and engines. It is planned to complete 60 diesel trains and 120 trailer coaches there each year.

At the Ganz and Mavag loco works 180 D.H.M. 400 h.p. engines are to be made during the next three years. Seventy are due to be exported this year. These two plants are also turning out this year 30 600-h.p. Ganz-Jendrassik diesel engines, of which 24 will be exported. The others will be put into service in Hungary. In 1958-60 it is planned to manufacture a total of 150 of this type of engine.

### High-Speed Diesel Trains

Production of high-speed multiple-unit trains, driven by 450 h.p. five-gear Ganz-Jendrassik engines, is also to be increased. In the next three years 152 of these trains are to be produced, a considerable number for export. Twenty have already been delivered to the United Arab Republic this year and others are to go to Czechoslovakia and Yugoslavia. Hungarian State Railways will receive 12 before the end of the year.

The diesel programme includes the modernisation of the 21 basic types of the Ganz-Jendrassik engines, which range from 7.5 to 2,000 h.p.

At the Mavag Engine and Machine Works, machinery worth almost £2 million (65 million forints) is to be installed in the next three years. The manufacture of 400 h.p. engines there is scheduled to increase fourfold and of 600 h.p. engines about 12 times. In 1961, these works will begin the manufacture of 1,600-h.p. and 2,000-h.p. engines.

During the three years a total of 979 passenger coaches and 1,103 goods wagons are to be built at carriage works. At present coaches and goods wagons are being exported to the Argentine, the United Arab Republic, Burma, Yugoslavia, Poland, China, and Russia.

### Westminster Bank Railway Society's New Club Room

Sir Reginald Wilson, Member of the British Transport Commission, and Chairman of the Eastern Area Board, performed the opening ceremony, on October 20, of the Westminster Bank Railway Society's club room at Broadhurst Gardens, West Hampstead, London. The room, which is situated over the West Hampstead Branch of the Bank, was made available by the manager and his staff. Gratitude was expressed to the general management of the bank for making this possible.

Sir Reginald Wilson spoke of the contributions which can be made by amateur enthusiasts in discussing the problems of transport, particularly railway transport. People who are interested in railways are of interest to the British Transport Commission. The Westminster Bank Railway Society is concerned with past, present, and future railway affairs. Sir Reginald Wilson would be pleased to co-operate with the Society in its study of British Railways modernisation.

Among those present were: Mr. R. E. Elliot, Joint General Manager, Westminster Bank; Mr. T. F. B. Powell, Assistant Chief Accountant, Westminster Bank, and Vice-President of the Society; Mr. H. W. J.

Wright, Chairman of the Society and lately Manager, Hitchin Branch; Mr. J. B. White, Hon. Secretary of the Society; Mr. J. H. Brebner, Public Relations Adviser, B.T.C.; Mr. C. J. Rider, Public Relations & Publicity Officer, Western Region, British Railways, and Mr. T. A. Germaine, Public Relations Assistant, Eastern Region, British Railways. The President of the Society, Mr. C. D. Hely-Hutchinson, Director of the Westminster Bank, was unable to attend due to ill-health.

### Longer Goods Trains on "Widened Lines"

By altering the layout of the "Widened Lines" in the Farringdon area, London Transport Executive has been able to make a considerable contribution to more efficient working of cross-London railway goods traffic.

Trains of up to 50 wagons, compared with 30 previously, can now be worked over this section from the Eastern and London Midland Regions of British Railways to the Southern Region.

A banking locomotive spur has been removed from the Holborn Viaduct side of Farringdon Station to the Kings Cross side. Apparatus now enables the driver of a goods train requiring assistance up the gradient to Holborn Viaduct to exchange visual signals with the driver of the banking locomotive, thus ensuring that the crews of train and banking engines work in proper conjunction.

The new banking locomotive spur, with connections to the up and down "Widened Lines," has been constructed in the former goods yard on the west side of Farringdon, and the existing spur, with the connections on the up road between Farringdon and Holborn Viaduct has been removed.

#### Signalling Alterations

Re-siting the locomotive spur has entailed alterations to the signalling controlled from the interlocking machine at Farringdon and to the control desk which operates this machine. Three new shunt signals and four sets of points have been installed and one signal has been removed. The new signals are of the externally-illuminated disc type and, with the new points, are operated from the interlocking machine at Farringdon and controlled by push-buttons from the control desk. The illuminated diagram in the Farringdon signalbox has been provided with the necessary additional indications for all new signals and points.

An externally-illuminated wagon target sign bearing the legend "14-30" has been fixed near Holborn Low Level down inner home signal No. 32 and a second sign reading "31-50" adjacent to Holborn Low Level down starting signal No. 36. These signs show the position at which the driver of a train requiring assistance should stop with respect to the length of his train. The former signs, marked "21-25" and "26-30" have been removed.

#### "Sign Contact Lines"

Two wires, known as "sign contact lines" have been fixed to the tunnel wall in such a position that they can be reached by the driver of the train engine without leaving his cab. A similar set of wires has been placed where it can be reached by the driver of a banking locomotive when standing at the rear of the train.

The driver of the train engine gives one crow on the whistle when approaching Farringdon as an indication that banking

assistance is required. The banking locomotive runs on to the rear of the train and, when ready to assist, its driver pinches the special wires fixed to the tunnel wall together. One minute after this has been done, or after a plunger has been pressed should the banking locomotive still be in Farringdon platform, a single-sided "banking" sign will be illuminated at the appropriate signal.

When the signal is cleared the driver of the train engine pinches the wires on the tunnel wall by his side together. This action illuminates several single and double sided "banking" signs at intervals along the track as an indication to the driver of the banking engine that the train is ready to proceed. One or more of these signs can be seen by the driver of the train engine, who can thus see that the appropriate indication has been given to the banking engine. The driver of the banking engine then starts to assist the train and continues as far as Ludgate Hill, after which he returns to Farringdon.

The work was carried out to the requirements of Mr. C. E. Dunton, Chief Civil Engineer, London Transport.

### Southern Region Apprentice School Opened at Eastleigh

The new apprentice training school at British Railways, Southern Region, locomotive, carriage and wagon works, Eastleigh, Hampshire, was opened by Sir Philip Warter, Chairman of the Southern Area Board, on October 15.

The school has an 80-ft. central workshop, classrooms, an instructors' room and an office block. The workshop is fully equipped with fitting stands, a marking-off table, centre lathes, a large selection of machine tools, a woodworking machine and benches, a brazing fire, sheet metal working machines, a smith's hearth, a gas-fired furnace, and a sand bench.

The school will give 15-year-old school leavers a year's training in both theoretical and practical subjects, so that they are ready to take up craft apprenticeships at

the age of 16. Accommodation is available for 50 apprentice trainees.

Some two-thirds of the trainees' time is spent in the workshop where basic training is given in four groups of trades: fitting; turning and machining; woodworking; and sheet metal working, smithing, and moulding.

In the classrooms they study theory, workshop technology, industrial history, engineering drawing, science, and English. They also learn workshop safety precautions and first aid, listen to talks by specialists, see documentary films, and visit other works.

The chief instructor and four workshop instructors are all permanent railway staff. Lecturers are supplied by Hampshire Education Committee to teach science, English, and engineering drawing.

The trainees work an eight-hour day and a five-day week. Their holidays are based on those in the main works. They also use the men's canteen and share their social facilities.

At the opening ceremony Sir Philip Warter, who was introduced by Mr. C. P. Hopkins, General Manager, Southern Region, said that British Railways had lagged behind other industries in providing training schemes and other incentives to get young men to join the railways. We are spending £1,250,000,000 on equipment, but that will only take us so far. What we need, he stated, are the technically able personnel to run the railway afterwards, and the purpose of this school and others like it is to ensure that the railways should be regarded by young people and their parents as something well worth-while going into.

**PROPOSED ACQUISITION OF G. BEATON & SON LTD.**—The George Cohen 600 Group Limited is reported to have offered to purchase at the price of 4s. a share the whole of the 1,600,000 issued shares of 2s. 6d. each in the capital of G. Beaton & Son Ltd. The directors of the latter company will recommend this offer to the shareholders for acceptance and have agreed to accept it in respect of their own holdings.



Mr. C. P. Hopkins (left) introducing Sir Philip Warter at the opening of the apprentice training school, with (right) Mr. W. J. A. Sykes, Chief Mechanical & Electrical Engineer, Southern Region



## British Railways and B.R.S. Freight Transport Exhibition

The British Transport Commission road and rail freight services will be on view to the public early next month at a freight transport exhibition, to be staged jointly by British Railways and British Road Services, at Battersea Wharf Goods Depot, London, S.W. The exhibition will be opened by Mr. Harold Watkinson, Minister of Transport & Civil Aviation.

The exhibition will give visitors the opportunity to see at close hand examples of the equipment now in use in the services offered by both undertakings, and a glimpse behind the scenes of some present and future developments in moving freight traffic.

Among the exhibits will be mechanical handling equipment and rolling stock, including wagons unloaded pneumatically, motorcar carriers, international rail transport vehicles, a wagon which can convey electric transformers of up to 135 tons in weight, and diesel locomotives.

A selection of the British Road Services fleet will include an eight-wheel lorry with a body made in three demountable and interchangeable sections for rapid loading and unloading. There will also be special vehicles for carrying grain and liquids in bulk, motorcars and motorcar bodies, and other goods needing individual or exceptional provision.

The emphasis of both the road and rail exhibits will be upon the improvement of door-to-door services. There will be many types of container and pallet, and demonstrations and films showing methods of using mechanised equipment and new devices.

The exhibition will be open free to the public on November 1 (10 a.m. to 4 p.m.), on November 2 (2 p.m. to 4 p.m.), and on November 3 to 5 inclusive (10 a.m. to 4 p.m.).

## Staff and Labour Matters

### Railway Pay Review

The difficulty referred to in our last week's issue in reaching agreement on the terms of reference to the independent body which it is proposed to set up to undertake the inquiry into the railway pay review has now been resolved. The N.U.R. have agreed to accept the terms of reference subject to a minor alteration in the text and on the understanding that the union reserves the right to lodge a claim through the normal negotiating machinery based on cost of living should such a course be necessary during the inquiry.

Details of the terms of reference as finally agreed are given below:—

At the time of the settlement of the claims of the A.S.L.E. & F., N.U.R., and T.S.S.A. by an increase of 3 per cent effective from June 30, 1958, in the rates of pay of the grades covered by the machinery of negotiation for railway staff, the published agreement reached between the British Transport Commission and these three trade unions included a statement that there should be discussions in August, 1958, in respect of an investigation being conducted into the whole question of the relativity of railway pay, including a review of the wages and salaries structure.

Discussions between the Commission and the railway trade unions took place on August 25, 1958, when it was agreed that an independent body be set up by the Commission and the trade unions to

conduct an inquiry into railway pay, and that a sub-committee, comprising representatives of the Commission and of the three trade unions, be appointed to consider who should be invited to conduct the inquiry and its precise terms of reference.

The arrangements agreed following the sub-committee's recommendations are:—

1. The function of the independent body will be the ascertainment and objective presentation of the facts with such general observations and conclusions as it may consider appropriate on matters within its terms of reference as set out in paragraph (3) below. Its report will be considered by the parties to the recognised negotiating machinery, it being understood that the sources of the information supplied on a confidential basis will not be disclosed.

2. It is accepted that neither the Commission nor the trade unions can enter into any prior commitments on the report of the independent body but the parties recognise that without a genuine desire to reach a reasonable settlement of pay issues the object of setting up the inquiry will not be achieved.

3. The independent body shall be composed of a Chairman and two members appointed by agreement between the Commission and the trade unions. The Chairman and members of the independent body shall not be members or officers of the British Transport Commission or officials or members of any of the three railway trade unions. The terms of reference of the independent body will be as under:—

(a) To conduct an investigation into the relativity of pay of salaried and conciliation staff in British Railways covered by the machinery of negotiation for railway staff with the pay of staff in other nationalised industries, public services, and appropriate private undertakings, as agreed between the parties or on the instigation of the independent body, where reasonable and useful comparisons can be made, and in relation to any such comparisons—

(i) to establish the degree of job comparability;

(ii) to ascertain the rates of pay and such other emoluments of the jobs compared as may be properly taken into account; and

(iii) to take account of all such other factors as the body may consider relevant in assessing the comparability of the jobs.

(b) To present to the Commission and the three railway trade unions with as little delay as possible a report setting out objectively the ascertained facts, together with such general observations and conclusions as it may consider appropriate on matters within the terms of reference.

In conducting its examination the independent body will pay due regard to the existing railway wages and salaries structure and may draw attention to any feature of that structure which it considers should be brought to the notice of the parties.

4. A committee will be appointed consisting of eight representatives of the Commission and eight representatives of the trade unions. The independent body will submit to this Committee such periodical reports as it may request about the progress of the inquiry and the work of the staff carrying out the investigations. It will also advise the Committee of the lines on which it is conducting the inquiry and the methods adopted in ascertaining the facts. It will seek general guidance of the Committee on matters concerning the conduct of the inquiry.

5. The independent body will be provided with such staff as may be required

to enable it to conduct the inquiry. The staff will be under its control and direction but its appointment will be subject to agreement by the committee.

The British Transport Commission is now considering, with the three railway trade unions, the names of the three persons who will be invited to serve on the independent body to undertake the inquiry.

### Pay Increase for Provincial Bus Workers

Under an award of the Industrial Disputes Tribunal, provincial employees of private omnibus companies or of undertakings controlled by the British Transport Commission are to receive a weekly pay increase of 7s. or more. This is the equivalent of a rise of slightly more than 4 per cent.

Maintenance men employed permanently on night work will receive weekly advances of 11s. to 31s. as the Tribunal has conceded in full the unions' demand that such men should be paid at a standard rate of time-and-a-quarter.

The Tribunal has rejected the unions' claim for a pension scheme.

Some 100,000 employees are affected by the award, the annual cost of which is estimated at more than £3 million.

Employees of municipal and tram undertakings are not affected by the award, and negotiations in respect of such staff are to follow.

It is understood that, when all claims have been settled, the Transport & General Workers' Union will call a national businessmen's conference of all sections in an endeavour to formulate a common policy for future negotiations.

**RAILWAY MATERIAL FROM JAPAN.**—Japan and Argentina have signed a U.S. \$50,000,000 agreement under which Japan will supply 100,000 tons of rails and 350 locomotives over a period of five years in exchange for wool, wheat, and maize. The rails will be provided by the Yawata and Fuji Steelworks and the locomotives by the Toshiba Company.

**MONUMENT LANE AND PLECK PASSENGER STATIONS TO CLOSE.**—British Railways London Midland Region, has announced that the passenger stations at Monument Lane, between Birmingham New Street and Wolverhampton, and Pleck, between Walsall and Wolverhampton, will be closed from November 17. Bus services operate in the area. Parcels and passenger train merchandise for Monument Lane will be dealt with at Birmingham New Street, and the present arrangements for freight traffic will continue. Parcels and passenger train merchandise for Pleck will be dealt with at Walsall.

**DIESEL RAILCARS FOR KINGS CROSS SUBURBAN SERVICE.**—British Railways, Eastern Region, is planning to allocate 20 Craven-built diesel twin railcar sets to certain suburban services from and to Kings Cross on the Great Northern Line. It is hoped that all these cars will be in operation during the first half of next year. Two two-car sets are already in use on G.N. suburban lines; these are being used initially on off-peak services because their carrying capacity is limited. The 20 units will not suffice to cover the whole of the suburban service, and the final scheme will be a combination of diesel locomotive-hauled trains and diesel railcars.

## Contracts and Tenders

### Rolling stock for East African Railways and Nigerian Railway Corporation

Gloucester Railway Carriage & Wagon Co. Ltd., has received orders from the Crown Agent for the following rolling stock:

18 third class carriages for East African Railways & Harbours  
8 bogie goods brake vans, type "B.V.O." for the Nigerian Railway Corporation.

Linke-Hofmann-Busch G.m.b.H. has received an order from the Pakistan Railways for 230 bogie passenger coaches of some 25 different types and interior arrangements, and including dining cars and air-conditioned coaches. Some are for the metre-gauge Eastern Bengal Railway and the remainder for the broad-gauge North-Western Railway.

British Railways, London Midland Region, has placed the following contracts:—

Worthington (Contractors Limited, Liverpool, 6: new staff amenities, Dingle Sidings, Garston

Concrete Repairs Limited, London, S.W.1: repairs to coaling plant structure, motive power depot, Lostock Hall

A. H. Anderson Limited, London, S.W.1: amenities, Bedford prefabricating depot

C. Booth & Son, London, N.7: temporary staff accommodation, Marylebone Station

Charles R. Price, Barnsley Road, Doncaster: superstructure to new district electric depot and washing plant foundations, Longsight, Manchester

Wm. Jones Limited, London, W., earthworks and drainage, Adswold  
Leamore Construction Co. Ltd., Walsall, foundations and roads, parcels depot, Coventry.

British Railways, Eastern Region, has placed the following contracts:—

J. Westwood & Co. Ltd., Millwall, London, E.14: reconstruction of portions of superstructures of underline bridge No. 21 over Valance Road and underline bridge No. 22 over Hemming Street carrying main, suburban and electric lines between Liverpool St. and Bethnal Green

The Siemens & General Electric Railway Signal Co. Ltd., Wembley, Middlesex: supply and installation of relays, feed equipment, cables, lineside apparatus cases, and so on, required in connection with the sub-division of track circuits between Shenfield and Southend Victoria

The Cleveland Bridge & Engineering Co. Ltd., Darlington, Co. Durham: reconstruction of underline bridge No. 1432 over River Lynch between Broxbourne and Roydon

W. & C. French Limited, Dedham, Nr. Colchester: reconstruction of superstructure of overbridges Nos. 158, 159, 160, 170, 192 and 196 between Chelmsford and Colchester

Ransomes & Rapier Limited, Ipswich: supply and delivery of one Rapier 7 standard diesel-electric fast travelling mobile crane

W. & J. Glossop Limited, Wandsworth, London, S.W.18: surface dressing of roadways in the Kings Cross and Stratford districts

Constable, Hart & Co. Ltd., Richmond, Surrey: resurfacing of roadways

in asphalt in the Kings Cross and Stratford districts

Modern Paviers Limited, Shipley, Yorks: resurfacing of roadways in asphalt in the Doncaster and Sheffield districts

Clough, Smith & Co. Ltd., Crawley, Sussex: supply, delivery and erection of electric lighting installation for Broughton Lane Goods Yard, Sheffield

Peter Lind & Co. Ltd., Westminster, S.W.1: alterations to superstructures of overbridges Nos. 244, 245, 7, 25, and 27 between Westcliff-on-Sea and Shoeburyness.

The Special Register Information Service, Export Services Branch, Board of Trade, has received calls for tenders as follows:—

#### From India:

6 refrigerated wagons for carrying fish, 55 ft. over body, 10 ft. 8 in. wide, 5 ft. 6 in. gauge.

The issuing authority and address to which bids should be sent is the Government of India, India Supply Mission, 2536, Massachusetts Avenue, N.W., Washington 8, D.C. This purchase will be financed by the International Co-operation Administration (I.C.A.), the agency through which the United States Government gives economic and technical assistance to other countries. The tender No. is B-944. The closing date is November 15, 1958. The Board of Trade reference is ESB/25260/58/ICA.

A large quantity of steel material including beams, channels, angles, squares, tees, bars, rails, rounds, billets, blooms, flats, plates, and sheets.

The issuing authority is the Government of India, Ministry of Steel, Mines, & Fuel, Iron & Steel Control, 33, Netaji Subhas Road, Calcutta 1. The tender No. is CP/18/178. The closing date is November 3, 1958. The Board of Trade reference is ESB/25144/58.

#### From Portuguese East Africa:

8 third-class railway coaches.

The issuing authority is the Ports, Railways & Transport Department, Lourenço Marques. The tender No. is 230/58. A provisional deposit of Esc. 30,000 must be made by tenderers. The closing date is December 30, 1958. Local representation is essential. The Board of Trade reference is ESB/25619/58.

#### From Greece:

3 group A type signals each comprising one semaphore, one distant signal with all accessories (point locking device at the entrance of the turnout, operations stand, compensators, wireline, and so on)

8 group B type signals each comprising two semaphores, two remote signals with all accessories (point locking device at the entrance of the turnout, operation stands, compensators, wireline, and so on)

Spare parts of above of a value not exceeding 8 per cent of the total value.

The issuing authority is the Ministry of Finance, Greece. The tender No. is 644. Bids should be sent to the office of the State Procurements Service, 56, Panepistimiou Street, 3rd Floor, Athens. The closing date is November 11, 1958. The Board of Trade reference is ESB/25533/58.

#### From Uruguay:

A large quantity of coloured glass discs for signals and hand lamps.

The issuing authority is the Administración de Ferrocarriles del Estado. The tender No. is 425/58. A guarantee of \$Ur.700 is required for maintenance of offers. The closing date is November 11, 1958. Local representation is essential. The Board of Trade reference is ESB/25475/58.

Further details regarding the above tenders, together with photo-copies of tender documents, can be obtained from the Branch (Lacon House, Theobalds Road, W.C.1.).

The Commissioners for the Port of Calcutta invite tenders from manufacturers for the supply of three diesel-hydraulic shunting locomotives with spares. See Official Notices on page 528.

## Notes and News

**British Institute of Management National Conference.**—Sir Harold Howitt will open the British Institute of Management National Conference, "The Challenge of Change," being held in Brighton on November 26-28.

**Royal Engineers Army Emergency Reserve (Transportation) Annual Dinner.**—The annual dinner of the Royal Engineers Army Emergency Reserve (Transportation) annual dinner will be held at the Cafe Royal, Regent Street, London, W.1, on February 27, 1959.

**Harringay Park Station to be Renamed.**—British Railways, Eastern Region, has announced that Harringay Park station, on the (Kentish Town-) Crouch Hill to Woodgrange Park section of the London Tilbury & Southend Line, is to be renamed Harringay Stadium from October 27.

#### Jump from Bridge to Avoid Falling Girder.

—Four men jumped 20 ft. from an overline bridge on to the track at Ecclefechan, Dumfriesshire, British Railways, Scottish Region, on October 20, when a 30-ton steel girder fell in front of them from a lorry crossing the bridge. The bridge over the main London-Glasgow line is being demolished, but is still in use. Three of the men were working on the demolition operations, and the fourth, a relief signalman, was watching from the bridge. They were taken to hospital and treated for minor injuries but none were detained.

**German President's Journey to London via Gatwick Airport.**—The President of the German Federal Republic, Dr. Theodor Heuss, arrived at Gatwick Airport last Monday on his State visit to Britain, and travelled to London by British Railways, Southern Region, from the new Gatwick Airport Station. He was accompanied by the Duke of Gloucester. Mr. A. Earle Edwards, Operating Officer, Southern Region, travelled in the special train, which consisted of four Pullmans hauled by "Schools" class 4-4-0 locomotive No. 30933, *King's Canterbury*. It left Gatwick Airport at 11.41 a.m. and was routed via Streatham Common, Tulse Hill,

and Herne Hill to Victoria (Eastern Section) where it arrived at 12.30 p.m. President Heuss is the first V.I.P. passenger to travel by special train from or to Gatwick Airport.

**Diesel Railbus Service in Scotland.**—The Deputy Chairman of the Scottish Area Board of the British Transport Commission, Mr. D. H. Cameron of Lochiel, and Mr. G. W. Stewart, Assistant General Manager of British Railways, Scottish Region, recently welcomed at Elgin Station representatives of Government and many interests in Inverness-shire, Moray and Nairn to give them an opportunity to inspect the diesel railbus being placed in service on the 51-mile Speyside route between Elgin, Grantown-on-Spey, and Aviemore. The inspection was followed by a short demonstration run. Later the railbus travelled to Aviemore, where it was on display to the public. The new railbus is one of two built by Bristol Commercial Vehicles Limited in conjunction with Eastern Coach Works Limited, and described in our issue of August 22. The accompanying illustration shows the party at Elgin (left to right): Lord Provost W. B. Munro, Elgin; Major the Hon. Robert Bruce, Member of Scottish Council (Development & Industry); Provost R. Wotherspoon, Inverness; Mr. F. W. Walker, Convener of Inverness; Mr. D. H. Cameron of Lochiel; Mr. Neil MacLean, M.P. for Inverness-shire; Mr. James Stuart, M.P. for Moray & Nairn; Brigadier H. W. Houldsworth, Lord Lieutenant of Moray, and Mr. G. W. Stewart.

**British Timken Limited Wins Grand Prix at Brussels Exhibition.**—British Timken Limited has been awarded the Grand Prix for the best precision mechanics exhibit at the Universal & International Exhibition in Brussels. The stand, designed by Mr. L. Dorricott, Manager, Publicity Department, consisted of a series of light oak showcases, into which was built colour transparencies, showing various applica-



*Inspecting the railbus at Elgin, which is being placed in service on the Speyside line of the Scottish Region*

tions of Timken bearings, with internal and external views of the factory at Duston. Bearings on the stand ranged from one weighing  $3\frac{1}{2}$  tons for a rolling mill, down to one weighing  $\frac{1}{16}$  of an ounce, manufactured by the Fischer Bearings Co. Ltd., a subsidiary of British Timken Limited.

**London Midland Area Board Visits to Heysham and Blackpool.**—Lord Rusholme, Chairman of the London Midland Area Board, British Transport Commission, accompanied by members of the board and by Mr. David Blee, General Manager of the London Midland Region of British Railways, visited Heysham on October 15. After the monthly board meeting which was held in T.S.S. Argyll, they met, also in the ship, civic repre-

sentatives and traders and industrialists in the Morecambe, Lancaster, and Barrow areas. Next day they inspected the British Transport Docks at Fleetwood, attended the railways International Ambulance Competition at Blackpool, and in the evening met representatives of local authorities and traders and manufacturers in the Blackpool, Fleetwood, and Preston districts. The London Midland Area Board from time to time holds its monthly meetings in different areas of the Region instead of at Headquarters to enable the Members to get to know local conditions and staff more intimately, and to confer with business interests.

**G. Stephenson & Co. Ltd. Change of Address.**—The office of G. Stephenson & Co. Ltd. is being moved to Terminal House, 52, Grosvenor Gardens, S.W.1. on October 31. The telegraphic address will be Usinacier Wesphone London, and the telephone No. Sloane 9972/3.

**Engine Driver Accused of Manslaughter.**—Driver A. Wembridge, of Stewarts Lane shed, Southern Region, who was in charge of the locomotive of the Glasgow-Eastbourne car-sleeper express involved in the fatal collision with an electric train in Eastbourne on August 25, is being charged with manslaughter. The summons is answerable at Eastbourne on November 10.

**Stopping Trains Replaced by Slow Buses.**—In a letter published in *The Times* of October 21 it is pointed out that the stopping steam trains on the 51-mile Shrewsbury-Hereford line withdrawn last June averaged 28 m.p.h. between termini; the bus service covering the same route averaged 18 m.p.h. There are a good many fast services on this route calling at the few stations now open. Reference presumably is to villages now served only by bus since certain wayside stations were closed.

**Esso Research Centre Opened.**—The new Esso Research Laboratories near Abingdon, Berks, were opened on October 20 by Viscount Hailsham, Lord President of the Council, who said that it was appropriate for the Government to applaud the work of private industry in promoting research. Built and equipped at a cost of approximately £1,000,000 the laboratories



*The Duke of Edinburgh visiting the British Timken stand at the Brussels Exhibition with (left to right) Mr. A. J. Grainger, Sales Manager, Industrial Division, British Timken Limited; Mr. R. Baxter, Assistant Publicity Manager; and Mr. D. Hall, Technical Representative in Brussels*



employ over 300. Esso Research Limited has been making good progress in using radioactive engine components as large as cylinder liners for studying the effect of lubricant quality on engine wear. The laboratory equipment also includes apparatus for determining sulphur content by radioactivity, using tritium as the source of gamma rays. The operations of Esso Research in the international field were reviewed by Mr. C. S. Windebank, Managing Director, Esso Research Limited. The guests were welcomed by Mr. H. C. Tett, Chief Executive & Managing Director of Esso Petroleum Co. Ltd., who described research as the "third eye" of industry.

**Thos. W. Ward Limited Results.**—Group profits of Thos. W. Ward Limited for the year ended June 30, 1958, declined from £2,701,625 to £2,599,158, from which tax of £1,425,448 (£1,452,623) was deducted, leaving a net profit of £1,173,710 (£1,249,002). The final dividend is 10 per cent, plus a bonus of 5 per cent (both same), making an unchange total of 20 per cent for the year.

**Silentbloc Limited Results.**—Group trading profit of Silentbloc Limited during the past financial year increased from £345,659 to £405,583 and the profit before taxation from £241,361 to £297,237. After tax of £162,324 the net profit for the year was £134,913. The improvement of some £30,000 in net profit is mainly due to an increase in the turnover of the parent company and is encouraging in view of declining profit margins.

**Rhodesia Railways Rates Commission Sworn in.**—The Governor-General of the Federation of Rhodesia & Nyasaland, the Earl of Dalhousie, on October 10 swore in the members of the Railways Rates Commission. In the accompanying illustration Sir Walter Harragin, Chairman of the Commission, is seated, and standing (left to right) are: Lord Dalhousie; Mr. W. H. Eastwood, Minister of Transport & Works; Mr. D. M. Robbertze, Acting General Manager of South African Railways; Mr. J. R. Pike, formerly Chief Commercial Officer, British Railways Central Staff; Mr. W. Margolis; and Mr. B. Dar-

dagan, appointed Secretary of the Commission, which will begin its public hearings in Bulawayo on October 27.

**Railway Benevolent Institution.**—At a meeting on October 20 the board of the Railway Benevolent Institution granted annuities to six widows and six members, involving an additional liability of £279 12s. a year; 110 gratuities were also granted, amounting to £990 to meet cases of immediate necessity. Grants made from the Casualty Fund during the month of September amounted to £1,041.

**Powder Metallurgy.**—A meeting of the Powder Metallurgy Joint Group of the Iron & Steel Institute and the Institute of Metals will be held at Church House, Great Smith Street, S.W.1, on December 16 and 17, 1958, when there will be a symposium on "The Powder Metallurgy of Ceramic-Metal Materials." The meeting will begin at 6.30 p.m. on December 16, and will continue the following day. Six papers describing original research work will be presented. Tickets will not be required.

**British Railways Stand at Motor Show.**—British Railways Information Bureau at the International Motor Show at Earls Court, London, S.W.5, which is open until November 1, features a special display of photographs illustrating British Railways services to the motorist and the motorcar export industry, and a model of the 1,000-h.p. English Electric diesel locomotive. There are representatives of British Railways at the enquiry counter to answer visitors' questions about passenger and freight train services, fares, rates and charges, and on travel to and from the Continent.

**Closure of Trenholme Bar, Potto, and Sexhow Stations.**—British Railways, North Eastern Region, has announced that because of the loss which is being incurred, the section between Picton and Stokesley, on the line from Stockton to Whitby via Battersby, will be closed and the goods facilities withdrawn from Trenholme Bar, Potto, and Sexhow Stations from December 1. Approval has been given by the Transport Users' Consultative Committee

for the North Eastern Area and by the Central Transport Consultative Committee. Railheads will be established at Picton and Stokesley, from which points traffic now handled at Trenholme Bar, Potto, and Sexhow will be dealt with by British Railways road motor services.

**White Pass & Yukon Corporation Limited.**—Gross earnings for the three months to September 30 of the White Pass & Yukon Corporation Limited amounted to \$2,425,666, against \$2,739,843 in the same period of 1957. The net profit was \$175,817 (\$217,735). Gross earnings for the nine months to September 30 were \$6,648,824 (\$7,426,420) and net profits \$328,820 (\$469,732).

**Ransome & Marles Bearing Co. Ltd.**—The report of Ransome & Marles Bearing Co. Ltd. for the year ended June 30, 1958, shows a group net profit of £666,581, compared with £411,905 for the previous year. The dividend is to be the same, 15 per cent, as for the previous year, with a special interim payment of 2½ per cent. The annual general meeting will be held at Newark on November 6.

**W. T. Henley's and A.E.I. Results.**—A forecast of 15 per cent total dividend to repeat the total for 1957 is given in the statement of the directors of Associated Electrical Industries Limited, that they expect to declare a third interim dividend next month of 2½ per cent for 1958, payable in January, and a maintained final dividend of 7½ per cent. This is revealed in the formal offer from A.E.I. for the preference and ordinary capital of W. T. Henley's Telegraph Works, but it depends on the continuation of present trading conditions.

## Forthcoming Meetings

- October 24 (Fri.).—Institute of Traffic Administration, Kent & South Eastern Centre, at the Royal Star Hotel, Maidstone, at 7.30 p.m. Inaugural meeting. Paper on "The Monorail," by Sir Alfred Bossom.
- October 24 (Fri.).—Railway Correspondence & Travel Society, B.B.C. television, "The Lion's Den," at 10.15 p.m.
- October 25 (Sat.) to October 26 (Sun.).—British Railways (Southern Region) Lecture & Debating Society. Visit to York and district.
- October 25 (Sat.).—Institution of Railway Signal Engineers, Bristol Section. Visit to the works of the Westinghouse Brake & Signal Co. Ltd., Chippenham.
- October 25 (Sat.).—Railway Correspondence & Travel Society, Sussex & Kent Branch, at the Railway Hotel, Brighton, at 7 p.m. Paper on "The locomotives of the S.E.R.," by Mr. N. Wakeman.
- October 28 (Tue.).—Institute of Transport, Metropolitan Graduate & Student Society, at 80, Portland Place, London, W.1, at 5.45 for 6.15 p.m. Paper on "Operating practice on the railways of London Transport," by Mr. R. C. Hider.
- October 28 (Tue.).—Railway Correspondence & Travel Society, East Midlands Branch, at the N.C.S. Guild Room, Toll Street, Nottingham, at 7.30 p.m. A British Railways official will give an address on "Rates, fares, branch line working, etc."
- October 29 (Wed.).—Railway Students'



Swearing in members of the Rhodesia Railways Rates Commission

Association, at the London School of Economics & Political Science, Houghton Street, Aldwych, W.C.2., at 6.15 p.m. Mr. A. B. Valentine's Presidential Address.

October 30 (Thu.).—British (Western Region) London Lecture & Debating Society, in the Headquarters Staff Dining Club, Bishop's Bridge Road, Paddington, W.2, at 5.45 p.m. Paper (illustrated) on St. Mary's Hospital and Paddington, "by Mr. A. Dickson Wright, Consulting Surgeon.

November 1 (Sat.).—Electric Railway Society, at the College of Technology, Suffolk Street, Birmingham, at 2.45 p.m. Paper on "The Moscow Metro," by Mr. J. H. Price.

November 1 (Sat.).—The Stephenson Locomotive Society, North Western Area, in the Y.M.C.A., Fargate, Sheffield, at 6.30 p.m. Talk by Viscount Garnock on "Railroads on the North American Continent."

November 1 (Sat.).—The Stephenson Locomotive Society, North Western Area, in the Conference Room, Liverpool Central Station, at 7.30 p.m. Paper on "The Caledonian 4-4-0's" by Mr. Alex H. McNair.

November 1 (Sat.).—Railway Correspondence & Travel Society, South of England Branch, at the Y.M.C.A., Friar Street, Reading, at 6 p.m. Paper on "Reminiscences of the Midland & South Western Junction Railway," by Mr. Y. B. Sands.

November 3 (Mon.).—Institute of Transport, Metropolitan Section, 80, Portland Place, London, W.1, at 5.30 for 6 p.m. Paper on "Some impacts of air and road transport on railway economics and practices," by Mr. C. E. Whitworth.

November 4 (Tue.).—Permanent Way Institution, Leeds & Bradford Section, in the British Railways Social & Recreation Club, Ellis Court, Leeds City Station, at 7 p.m. Paper on "The use of the Matisa recording trolley," by Mr. H. Field.

November 4 (Tue.).—South Wales & Monmouthshire Railways & Docks Lecture & Debating Society, in the Angel Hotel, Westgate Street, Cardiff, at 6.30 p.m. Paper on "Economics of Bedlam," by Professor A. Beacham, University College of Wales, Aberystwyth.

November 4 (Tue.).—Institution of Civil Engineers, at Great George Street, Westminster, S.W.1, at 5.30 p.m. Presidential address by Professor A. J. S. Pippard.

November 5 (Wed.).—Electric Railway Society, at the Fred Tallant Hall, 153, Drummond Street, London, N.W.1, at 7.15 p.m. Paper on "The daily round underground," by Mr. A. Gorton.

November 7 (Fri.).—The Railway Club, at 320, High Holborn, London, W.C.1, at 7 p.m. Paper on "The railways of the Wirral Peninsula," by Mr. G. F. A. Wilmot.

November 7 (Fri.).—The Stephenson Locomotive Society, Scottish Area, at 25, Charlotte Square, Edinburgh, at 7 p.m. Paper on "G.C., G.E., and Stewarts Lane," by Mr. R. H. N. Hardy.

November 8 (Sat.).—Permanent Way Institution, East Anglia Section, at Ipswich at 2.15 p.m. A paper on "Railway Weedkilling," illustrated by Mr. G. G. Fisher.

## Railway Stock Market

After a pause the upward trend in stock markets was resumed with a broadening of activity to shares which offer generous yields and others which so far have participated only moderately in the advance of market values. Hopes of expansion in world trade next year are the main factor governing sentiment.

Activity in Antofagasta stocks was again the chief feature among foreign rails, and the ordinary stock at 18½ fully maintained last week's rise, while the preference rose further on balance from 35 to 36½. The 5 per cent Bolivia debentures were 95½. Chilean Northern first debentures were 47½. Costa Rica ordinary stock held steady at 16 and the first debentures were again quoted at 75. Brazil Railway bonds were 5½; Paraguay Central prior debentures were 11; and Guayaquil & Quito assented bonds 76½. United of Havana second income stock remained at 6½ and San Paulo Railway 3s. units again changed hands around 2s. 1½d. Mexican Central "A" bearer debentures were 72.

West of India Portuguese capital stock held steady at 76 with the 5 per cent debentures 68. Barsi Light Railway stock kept at 24. In other directions Nyasaland Railways shares have strengthened from 12s. 6d. to 12s. 9d.; the 3½ per cent debentures were 65½.

Canadian Pacifics at \$53, compared with \$53½, were slightly lower than a week ago; the 4 per cent preference firmed up from 55½ to 56 and the 4 per cent debentures were maintained at 68½. White Pass shares at \$14½ were the same as a week ago. Algoma Central voting trust certificates were 7 and the income debentures \$267½.

Shares of locomotive building and engineering companies displayed rather more activity, though movements on the whole were small, but yields generally are good, and this seems likely to attract buyers if stock markets remain buoyant.

Beyer Peacock 5s. shares were steady at 8s. 10½d. at which there is a yield of over 9 per cent on the basis of last year's 16 per cent dividend, while Charles Roberts 5s. shares at 10s. 1½d. yield fully 7½ per cent, to take two examples. G. D. Peters were again quoted at 25s. 7½d., but Gloucester Wagon 10s. shares eased from 16s. 10½d. to 16s. 6d. and Wagon Repairs 5s. shares from 10s. 6d. to 10s. 3d. Birmingham Wagon strengthened to 19s. 7½d. and yield over 10½ per cent, last year's dividend having been 10 per cent. North British Locomotive rallied from 12s. a week ago to 12s. 6d., while in other directions, Westinghouse Brake at 43s. more than held their recent good rise. In this case the yield is under 4½ per cent, reflecting market hopes that the dividend will go above last year's 10 per cent. In fact, now that the Government is to remove the freeze imposed on investment in the public sector, imposed last year when the £ was weak and the bank rate up to 7 per cent there are prospects of speeding up of the railway modernisation programme in the next two years, a factor which may, of course, draw more attention to shares of equipment companies as time proceeds.

Associated Electrical have moved up to 55s. on the hint that the dividend total is likely to be maintained at 15 per cent, given in the full particulars of the take-over offer made to shareholders in W. T. Henley's Telegraph Works. English Electric at 60s. 3d. were at a new peak for the year; they were 59s. 3d. a week ago. General Electric rose from 38s. 3d. to 39s. 6d., but Crompton Parkinson 5s. shares at 13s. lost a few pence of their recent good

advance. Birmid Industries have been firm at 76s. 3d. and British Aluminium rose to 53s. 6d., while British Oxygen were 44s., their best this year. Ferrybridge Industries 4s. shares have changed hands around 15s. 7½d., on the good interim statement. British Timken rose to a new peak for the year of 57s. 3d., Ransomes & Marles 5s. shares were 14s. 4½d., and T. W. Ward rose further to 87s. 3d. on the good impression created by the results. Dowty Group shares have been firm at 40s. 6d., Pressed Steel 5s. shares at 20s. 3d. reached their best for the year.

## OFFICIAL NOTICES

### THE NIGERIAN RAILWAY CORPORATION

invites applications for the following post:

#### MOTIVE POWER OFFICER

**Duties:** A Motive Power Officer is responsible for assisting in the supervision of locomotive utilisation, failure, water and coal supplies, lubrication and the employment of enginemmen. He is further responsible for Rest Houses, Staff and Discipline and the maintenance of breakdown train equipment.

**Qualifications:** Candidates must have served an apprenticeship, graduation or diploma course or pupillage with a Railway Company or locomotive manufacturers, with subsequent experience on a railway. Candidates should have had extensive experience in both utilisation and repair of locomotives and must have 5 years' experience in motive power organisation in the locomotive running section of a railway with knowledge of machine and repair shop methods and be capable of controlling staff and labour. Experience in Diesel maintenance and utilisation an advantage. Candidates must possess A.M.I.Mech.E. or A.M.I.E.E., or be graduates thereof.

**Salary:** In scale £1,100 by £50 per annum to £1,900 (inclusive of Overseas Pay) per annum. Starting salary according to qualifications and experience. Appointments may be on pensionable terms or on contract with a gratuity payable on completion of contract at the rate of £18 6s. 8d. to £31 13s. 4d. for each completed month of service.

**Tours:** 15 months in Nigeria followed by 15 weeks' leave on full pay.

**Quarters:** Partly furnished quarters are provided at low rental.

**Allowances:** There are attractive family, travelling, transport and other allowances.

Send postcard before 11th November, 1958, mentioning the post and this paper for further particulars and application form, to:—

The London Representative,  
Nigeria Railway Corporation,  
Nigeria House, 9, Northumberland Avenue,  
London, W.C.2.

**FOR SALE:** 2 "PECKETT" STEAM LOCOMOTIVES dated 1936 and 1923. 14 in. O.D. cylinders, 20 in. stroke, 4 wheels coupled, 160 lbs. p.s.i. working pressure. A stock of essential spares is available also. Arrangements to view are to be made to Divisional Purchasing Officer, C.E.G.B., East Midlands Division, P.O. Box 25, Barker Gate, Nottingham, phone 46151.

**THE COMMISSIONERS FOR THE PORT OF CALCUTTA.**—Tenders are invited from manufacturers for the supply of three diesel hydraulic shunting type locomotives with spares. Tender forms and Specifications may be obtained from Messrs. Rendel, Palmer & Tritton, Consulting Engineers and London Agents to the Commissioners, upon payment of £1 10s. 0d. per copy and at the office of the Chief Mechanical Engineer to the Commissioners for the Port of Calcutta, 8, Garden Reach Road, Kidderpore, Calcutta-23, India, on production of a receipt for Rs. 20/-, for each copy, from the Commissioner's Treasurer at 15, Strand Road, Calcutta. This amount is not refundable under any circumstances. Tenders should be submitted in triplicate, in sealed covers superscribed "Diesel Locomotives." The original with a copy should be addressed to Messrs. Rendel, Palmer & Tritton, 125, Victoria Street, Westminster, London, S.W.1, and the second copy should be addressed to the Chief Mechanical Engineer, 8, Garden Reach Road, Kidderpore, Calcutta-23, India, so as to reach them not later than 10 a.m. G.M.T. in London and 3 p.m. I.S.T. in Calcutta on Friday, the 19th December, 1958. These tenders will be opened publicly half an hour later on the same day at both the above premises in the presence of those Tenderers who wish to attend.

**BOUND VOLUMES.**—We can arrange for readers' copies to be bound in full cloth at a charge of 25s. per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tothill Press, Limited, 33 Tothill Street, London, S.W.1.

